

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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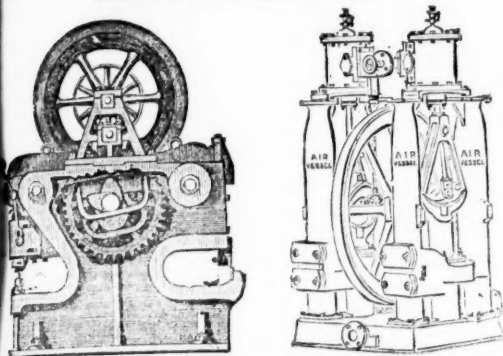
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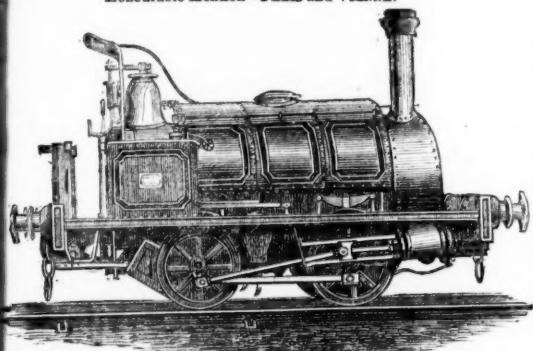
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PARIS,
BRONZE MEDAL, 1867.



ORDER OF THE CROWN OF PRUSSIA.



FALMOUTH,
SILVER MEDAL, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the
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exhibited the McKean Drill alone as the MODEL BORING MACHINE
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In a series of comparative trials made at the St. Gothard Tun-
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Drill—may be worked at a higher pressure than any other
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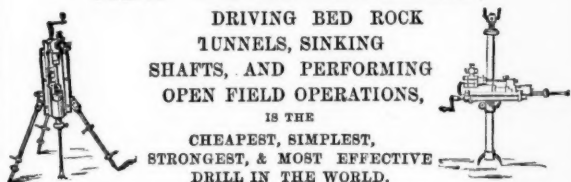
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- 3.—FROM 60 TO 70 PER CENT. OF THE LABOUR IN DRESSING, AND
FROM 5 TO 10 PER CENT. OF ORE OTHERWISE LOST, IS SAVED.
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Duke of Buccleuch's); Bewick Partners, Haydon Bridge; the Old Darren, Esclair-
mwyn, and Ystumtuen Mines, in Cardiganshire; Mr. Beaumont's W.B. Mines,
Darlington; also Mr. Sewell, for Argentiferous Copper Mines, Peru; the Brats-
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Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middleton-
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profit on our Sandhead waste heaps amounted last year to £600, besides the ma-
chinery being occupied for some months in dressing ore-stuff from the mines. Of
course, if it had been wholly engaged in dressing wastes our returns would have
been greater; but it is giving us every satisfaction, and bringing the waste heaps
into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines,
Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much
pleasure in stating that a full and superior set of your Ore Dressing Machinery has
been at work at these mines for fully a month, and each day as the moving parts
become smoother, and those in charge understand the working of the machinery
better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply,
and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines,
says—"Your machinery saves fully one-half on old wages, and vastly more on the
wages we have now to pay. Over and above the saving in cost is the saving in ore,
which is a much short of 10 per cent."

GREENSIDE MINE COMPANY, Patterdale, near Penrith, say—"The
separation which they make is complete."

Mr. MONTAGUE BEALE says—"It will separate ore, however close
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Mr. C. DODSWORTH says—"It is the very best for the purpose
and will do for any kind of metallic ores—the very thing so long needed for dress-
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"The 'Universal' (H. Tyler and Co.) Pump can certainly claim to be the simplest machine of its kind in the exhibition."—*Engineering*, July 11, 1873.

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Apply to H. WEST, Esq., Manager, 1, Queen Victoria-street, Mansion House.

Original Correspondence.

FORCED SALES OF COPPER.

SIR.—It would appear from the letter of Messrs. James and Shaker upon Forced Sales of Copper in the Metal Market, that they have a very limited construction upon the phrase "forced," and as their remarks are calculated to mislead, I must positively deny that the term "forced" is in any way misplaced when applied to absolute sales. It does not follow because a sale is forced that it always arises from the insolvency of the seller, that would be an absurd conclusion to come to, and there are few, if any, besides your correspondents who would in the instance referred to put that interpretation upon the expression. Without entering upon the various reasons of forced sales, I will simply add that a forced sale, as generally understood, is "selling a thing for what it will fetch," and as Wallaroo copper was sold for what it would fetch, or without reserve, which is an equivalent meaning, I maintain that the term used was certainly the most expressive and appropriate epithet it could possibly have been used.

REVIEWER.

London, Jan. 27.

OUTLINES OF GEOLOGY—No. I.

SIR.—Geology treats of the materials of which the earth's crust is composed, of their classification into systems, their continuity, the remains of animals and plants found in various strata, and the agencies which have produced their arrangement. A knowledge of the animals and plants that are found in the different stratified rocks affords an insight into the condition of the earth at various periods in its history. A knowledge of the relative position of these rocks, and their order or sequence, is essential to the miner. It enables him to distinguish the primary metamorphic rocks from all others, and to predict the occurrence of metalliferous deposits in these rocks in whatever country they may be found. The coal miner, knowing what geological formation he has at the outcrop on the surface, deduces from this and other facts the probability of coal seams existing underneath, and what their depth may be. To the agriculturist the science will be of service, knowing the composition of the sub-strata he may, from this knowledge, be able to improve the fertility of the soil.

At the present time a constant change is observed to be going on between land and sea, that is, by the action of waves on sea coasts, by the action of carbonic acid in the atmosphere on rocks and metals, by denudation, and the scouring effect of river waters, materials are being carried to lakes, estuaries, and seas, and deposited in layers of sand and mud. By reasoning from the modified changes now going on over the earth's crust the geologist is enabled partially to unveil the obscurity of the past. For in a similar way to this, but on a more gigantic scale, we assume the various strata have been laid down, beginning with the metamorphic and ending with the tertiary strata. Many millions of years are supposed to have elapsed between the metamorphic and tertiary eras, this question of time, however, is mere conjecture, as no estimate can be made of the swiftness with which the different formations were effected. It must be admitted, however, that the deposition and changes of strata in the old period referred to must have been on a greater scale of magnitude to what is seen going on in the present time.

The temperature of the earth's crust has frequently been the subject of experiment. Observations in deep pits and in well sinking have determined that the line of invariable temperature is from 60 ft. to 100 ft. below the surface; the temperature during summer and winter remaining the same at this point. Below this there is a gradual increase of temperature, being 1° for about every 60 ft. additional in depth; some have given 50 ft. and intermediate numbers for this depth, but taking 60 ft. as approximately correct, then at a depth of 4000 ft. = 666 $\frac{2}{3}$ fms. there would be an increase of 66°, or with a temperature of 50° at the line of invariable temperature we should have a temperature of 116° at this depth. At a depth of 12,000 ft. = 2000 fms., the increase for depth would be 200°, or an ultimate temperature of 250° at this great depth. From these facts we infer that far down the earth's crust must be in a highly heated, probably molten, condition; that this internal heat is the cause of volcanoes, eruptions of lava, and hot springs. As this action of the interior is supposed to reduce its temperature, the result will be a gradual cooling of the crust of the globe, but scarcely appreciable unless taken over a long period.

But the heat of the earth's surface has been vastly greater in former ages than at present, being greatest at the metamorphic period, and cooling gradually to the present time. It is supposed the heat of the sun must also have been greater at this remote period, and there has been a gradual cooling of its mass to the present time, so that the then atmosphere would be heated by a more powerful sun, and by radiation from the earth. That the temperature on the surface of the earth was very great at the time of the deposition of the coal measures is shown by the plants which then grew, these being allied to those now growing in tropical climates, as palms, tree ferns, lycopods, &c.

In the igneous or granitic period we have evidences of great heat. The earth's crust was then probably often subject to internal eruptive force, giving rise to those granitic hills which are observable even at the present day, and by subsequent cooling and shrinking areas of elevation and depression have been formed, also fissures and dykes, so that the configuration of the earth's surface would be constantly undergoing changes.

The metamorphic rocks, gneiss and mica schist, are supposed to have been laid down subsequently from the debris of the igneous rocks. Under altered conditions as to temperature, and a less degree of eruption, but still comparatively active, they are considered to be sedimentary or stratified rocks, but crystallised by the heat of the igneous rocks on which they were laid. The gneiss most nearly resembles granite; the mica schist above it has a more laminated appearance. The clay-slate and silurian systems follow in order; these are stratified, with beds alternately of shale, limestone, and sandstone. The remains of animals and vegetation are found in this system to a considerable extent; these remains are wholly those of marine animals and plants, animals being represented by shell-fish of the lowest type, gradually rising in the scale of organisms. The earth was then not in a condition for terrestrial animals and plants to live and grow. In the Old Red Sandstone formation remains of (peculiar) kinds of fish are found, and a few land plants.

In the mountain limestone are found the remains of fish of large size, bivalve and univalve shell-fish, and crustaceans. The limestone in this formation is supposed to be produced by marine animals, as coral reefs and islands are formed in tropical seas at the present day.

The true coal measures overlying the millstone grit are characterised by the abundance of land vegetation. The earth's crust had at this period so far cooled down as to allow of the growth of a tropical land vegetation. Deposits of coal in various parts of the world attest to the prodigious growth of vegetable life, water plants and peaty matter probably being the origin of seams of coal. The remains of equisetums, tree ferns, palms, &c., point to a tropical climate. These have a faint resemblance to species now growing in tropical countries. The combined effects of high temperature and moisture have, however, produced vegetation of a kind not seen in the present day. The high temperature at this period must have produced immense evaporation; this would result in copious rainfall, in forming immense waterflow in rivers, and in scooping out valleys and deepening them, where the least resistance was offered to the abrading force of water. The rivers would carry their burden of sand and mud to be deposited with or over the growth of vegetation. The fire-clays which underlie most coal seams represent the mud in which the coal-producing plants have grown. Beside the agency of rivers there would be that of winds operating in carrying sand to fill valleys, or in raising sand-hills over vegetation; these acting from the difference between the high temperature and the polar one would have irresistible force at certain seasons, as we have in a less degree at the present.

The liassic period, which follows the permian and trias, is remarkable principally for the remains of reptiles it contains. The earth at this period had become further cooled down, and fitted for these

animals to live and breathe on its surface. From the difference in the kind of animals inhabiting the earth at these various periods geologists now classify the rocky formations, not according to their composition or structure, but according to the fossil animals or plants contained in them—the one being a surer guide than the other to the identification of any rock. First, the metamorphic class, azoic or no life; second, the palaeozoic or ancient life; third, the mesozoic or middle life; fourth, the caenozoic or recent life. The last class furnishes in the upper tertiary species of animals identical with some now inhabiting our seas.

Jan. 29.

M. B. G.

REVIEW OF MR. J. A. MORGAN'S ARTICLE ON THE ORIGIN OF METALS.

SIR.—If Mr. Morgan and Messrs. Mansell and Co. will not give credit to their author for the authorship of the theories they claim to advance, I must call their attention to the fact that as early as 1874 I published in the Mining and Scientific Press of San Francisco an article giving the identical examples and almost the words used in the third paragraph of Mr. Morgan's article. I have long been acquainted with the mines of Little Cottonwood, Colorado, Wyoming, and other States and Territories, but I doubt if Messrs. Mansell or their representatives have ever examined the mines of the different and remote places they speak of. The article in which the theory of metallic veins having been the result of igneous action was first advanced by me, and was published in the Mining and Scientific Press in, I think, November, 1874. In that article I endeavoured to show that the veins occupied pre-existing fissures that had been filled with their metallic contents long after they had been formed by the Plutonic earthquakes, and that the ore deposits are the result of sublimations or metallic solutions coming from the deep interior of the earth through the fissures of the dykes of porphyry, or through fissures in close proximity to dykes of intrusive rocks. I have since then extended the examples, and further shown the correctness of the theory I then advanced. (See Congressional Report on the Emma Mine investigation, pp. 635-36; also Utah Mining Gazette of April and May, 1874; New York Mining and Engineering and Mining Journal of August, 1876; and the Salt Lake Tribune, Jan. 1, 1877.) In all these articles I have insisted upon the fact that the metals came from the igneous interior of the earth, first as sublimations, which reaching the level to which water could penetrate were taken up by thermal mineral waters highly charged with just such acid reagents as are the products of Plutonic eruptions, which reacted upon the country rocks through which they flowed, decomposing and taking up parts of those rocks most easily dissolved, and depositing the metallic contents of the waters instead. That all metallic veins in the regions named received their metallic contents through the fissures of the porphyry dykes does not follow, as the mineral solutions, obeying the constant law of mechanics, have sought escape upon the line of least resistance, and fissures in the solid crust of the earth extending down to the region of igneous action could furnish a channel for and receive metallic solutions or sublimations as well as the fissures of the porphyry dykes. In regard to the analysis of the porphyry given in the fourth section, it proves nothing, as porphyry in contact with a metallic vein may be impregnated to such an extent with the matter of the vein that its constituents may be almost identical (in those parts in which it is in contact with the ore deposit) to the matter of the ore deposits themselves.

J. H. MORTON.

Salt Lake City, Utah, Jan. 6.

COMBUSTION OF COAL CARGOES.

SIR.—In your two last issues you published the report of the Chairman of the Metropolitan Patent Fuel Company, in which there were several references to the recently published report of the Royal Commission on Spontaneous Combustion on board ships laden with coals. This commission's report is so deeply interesting to the shipping and mercantile community, to the shipowners and coal owners in particular, that, perhaps, you will kindly allow me a small space in your widely known paper wherein to call more fully the attention of interested parties to its different results, or, I should say, its side issues. It is difficult to say which interest it touches most, although it touches them in different ways. I should call the attention of your readers to the action of the Government, as one of the results of the enquiry in taking measures to ascertain, through the medium of the Customs authorities, the sources whence all coal-carrying ships departing from these shores derive their supplies of fuel, whether as cargo or for ship's use. By a recent order of the board under the authority of the Customs Consolidation Act, 1876, the master of every ship is required to furnish this information on the clearance of his ship. The obvious reason, having regard to life and property at sea, is to secure a record to which reference may be had when any calamity by fire from spontaneous combustion, or other cause, occurs; to ascertain the origin and character of the fuel with which the doomed ship was freighted or supplied on her voyage out; indeed, such is the recommendation of the Royal Commissioners. The information thus obtained may prove of immense value to three classes at least—the shipowner, the insurer, and the coalowner. To the shipowner, as a warning what coal to take or what to avoid; to the insurer, as a criterion estimating his risks; and to the coalowner, as pointing to the necessity for remedying the detrimental character his coal must inevitably acquire if found too frequently in connection with a burnt ship. To a great maritime nation this proceeding on the part of the Crown is paternal, as affecting sailors, passengers, exporters, and others, beside the sea-going carriers of merchandise; but to no particular interest is it of so much importance in its immediate consequences as to the coalowner. Explosions and conflagrations on board ships freighted with coal may arise from other causes than spontaneous combustion or ignition of explosive gases, to the evolution of which coal is peculiarly liable, but whenever news of a disaster is followed by a disclosure of the name of the coal on board it will be difficult to dispose the public mind of the idea that cause and effect are evidenced by this combination, and that the elements of danger exist in the coal with which the ship was freighted.

It is obvious, therefore, that the coalowner's interest is, in anticipation of possible consequences (none knowing, though some may guess, who may be affected), to lose no time in considering how so damaging a result might be counteracted. The recent Admiralty Report of trials at Portsmouth of coals and patent fuels seems to point to an effectual remedy. This idea, which led to a reference to the report, was suggested by an article in a provincial paper, the Western Mail, advertising to the manufacture of a so-called "smokeless patent steam fuel" at Briton Ferry, and adding "it appears from a report of the Admiralty to the House of Commons, in reference to the various kinds of Welsh coals and fuels, that the Metropolitan Patent Fuel gained the day entirely for being smokeless, it being 95 out of every 100 minutes quite devoid of smoke;" and that "its evaporative power is much above the average of the usual returns for Welsh coal." Probably no coal maintains so high a character for steam-giving power as that of several districts in South Wales, although some of these have acquired a rather unenviable notoriety from repeated disasters to ships freighted from thence. The causes of such catastrophes are referable in great measure, as appears by the report of the Royal Commissioners, to the oxidation through absorption by porous coal of atmospheric oxygen (to which, however, patent fuel properly made is not liable), and to the escape by disintegration of high inflammable gases from coal, inevitably rendered smaller and more ignitable by breakage in shipping, and by trituration caused by motion on the voyage (to which, again, patent fuel is not liable). Coal, for the most part, is composed of cells which contain a highly explosive gas called carburetted hydrogen. It is plain that when this is liberated from the coal by crushing, prior to conversion into fuel, this danger is averted. There does not appear to be any instance on record of loss or injury by fire, or any ship freighted with patent fuel; the question, therefore, naturally presents itself whether the most valuable, though at the same time the most dangerous, steam coal might not be rendered perfectly innocuous by some of the processes used in making patent fuel? Our neighbours on the other side of the Channel are alive to

all this. The Revue Industrielle de Paris said, as early as October last, "La commission royale, nommée en Angleterre, pour examiner ce sujet (spontaneous combustion) présente un intérêt considérable et par son rapport élève d'un jour nouveau certains phénomènes jusqu'alors fort peu connus. Il reste à savoir maintenant s'il ne vaut pas mieux se servir de briquettes, qui ne présentent aucun danger comme cargo et qui remplacent avec avantage le charbon à son état naturel."

A. VASSARD.

Old Vicarage House, Greenwich, Jan. 24.

STEAM BOILERS OF THE ROYAL NAVY.

SIR.—I would call attention to a paper read this week at the Royal United Service Institution by Rear-Admiral Selwyn on Steam Boilers and Fuel, in which the gallant admiral urged that boilers should be covered internally with copper or some other metal not liable to oxidation. Now, in presence of the well known rapid corrosion of our marine boilers, is it not a wonder that something has not been done in this way before? I think it is rather discreditable to our marine engineers that with all their boasted ability they have not yet met and overcome this great evil. Much credit is due to Rear-Admiral Selwyn for the forcible way in which he has now called their attention to a matter which should have been before now dealt with by the marine engineers, an evil which ere now might have been very much reduced in magnitude, if not entirely overcome. Copper would not fulfill all the requirements, but we have a metal in tin—abundant, cheap, and every way adapted to this purpose, easily applied, and not liable to oxidation or corrosion by either the water or gases formed in steam-boilers. Yet the marine engineers have gone on year after year constructing boilers which can only work a few trial trips before becoming useless, and which are nearly always out of order when any important service is required of them. They have it now in their power to redeem the past by awaking to their duties, and making use of the elements a kind Nature has so liberally placed before them. By so doing they may save their country at a pinch; they will at any rate prevent much useless waste in the construction of marine boilers that are not reliable.

W. TREGAY.

FOREIGN LOANS, AND HOME MINING.

SIR.—What will England do with its hoarded and still accumulating unemployed capital? Will she stimulate and foster industrial pursuits and enterprises at home and in her colonies, or will she feed the craving wants of Russia, and enable that turbulent, restless, and intriguing country to complete at England's cost the network of strategic railways, and thus bring her forces nearer to the Danube, to Asia Minor, and to Turkestan? To lend money to Russia again, and especially at this moment, with her army and levies under arms, or in course of equipment, is simply to forge weapons against English interests, those of European peace, and the orderly progress of freedom and civilisation.

A vague rumour is in the air, and said to be wafted from Geneva, to the effect that a Russian loan of 200,000,000 roubles is about to be issued in England. We wonder what firm of capitalists would be bold enough to endorse or father such a preposterous claim on English pockets and England's credulity as would be involved in lending 30,000,000l. more to Russia, and especially so in the face of events such as have transpired in the history of that country in the small space of twelve short months, all of these appeal directly to the instincts of prudence habitual to, and combined with, the interests of capitalists and money-lenders. The past year has revealed—and to a great extent developed—a source of internal danger in Russia before unsuspected. The empire is honeycombed and undermined by secret societies, which may be patriotic or socialist, but are all revolutionary, and growing large enough to threaten serious convulsions.

Russia is not the stable, solid, change-defying State which confiding money-lenders thought her half-a-dozen years ago. Her political fabric is as rickety as her financial position is rotten, and if insolvency should not come in due course from the burden of accumulating debts it would follow through the early strife of political necessities. The English nation must have greatly changed in character, prudence, and forethought if, after the warnings of lending two billions sterling to the foreigner, and the grave defaults of various nations and States during the last decade, it lends any more money to such a borrower as Russia, with a territory already grown to 80,000,000 square geographical miles in area, and with a sparse population barely equal to 230 to the square mile, or less than a moiety of those employed in agriculture alone throughout the 5500 geographical square miles constituting the boundaries of English soil. We want no further foreign loans to foster speculative Stock Exchange dealings, extend gambling transactions, or to engross public attention to the prejudice and extinction of English industrial enterprises at home and throughout our colonies.

The manufacture of cotton fabrics and the consumption of our products is reduced in bulk, while the quality of foreign goods is enhanced and brought into competition with us in the chief marts of the world, and this arises mainly from England's cupidity and credulity in lending money to countries abroad, who enter into rivalry with us through the aid of our own money, and the employment of our best and most skilled artisans and workmen. These are signs of decay in the conservative conservancy of England's interests at home; most deplorable to witness, and grave indeed as regards the future, unless checked and remedied through wise legislation in moderate reforms in the free trade laws of the country.

It is a serious and growing evil in submitting to forced protective duties as are imposed against English manufacture and products by such borrowing countries as Russia, Austria, and France, and our lending them money to build up mills, manufactories, and factories, and to purchase the raw materials, in order to raise them up to a standard of competition in the supply of the wants of mankind, and wholly without the impost of a single farthing to the public exchequer of the Home Government. If Russia and other needy countries require our money to construct railways, telegraphs, make roads, irrigate the lands, build ships, and to obtain weapons of defence and aggression, they should give to England a material guarantee, in the payment of an *ad valorem* duty of 25 per cent. to 30 per cent. on the sums borrowed, and a tax of 5 per cent. annually for the continued use of the money in their own countries. They enjoy the social conveniences and revenues, they possess the properties created and the money as well; the increased employment of the masses and advanced trades and commerce associated therewith. Why, therefore, should England allow these foreigners to walk away with its accumulated gains, with a freedom from immediate impost or of prospective taxation, when they, on the contrary, levy a tax of 25 to 30 and up to 40 per cent. on our manufactured goods and products? Commerce and trade should be free alike in all countries, or those which fetter our industries and inventions with heavy taxes should be debarré by Act of Parliament from borrowing unchallenged and unshackled our wealth and our savings. We have vast industries and teeming populations to protect and to feed, while it behoves all to foster the interests of the Mother Country and of our colonies before we yield the slightest aid or relief to such priurient and vacillating countries as the Muscovite, the Greek, or the Slav.

The mining interests of the country show evident signs of revival; and as the discoveries of coal and of iron keep pace with the growth and expansion of their production, while the requirements of the age manifest equal growth and expansion in the demand and consumption of these necessary, nay indispensable, articles of social amelioration, and of the trading and commercial dealings of the nations and communities of the world, and especially so in respect to the Celestial Empire and of Persia and Japan in the enlightened civilisation and intelligence of these countries in their advancing intercourse with the Western Hemisphere, we cannot but picture a bright and prosperous future to those stable and all-important industries at home, and the varied branches of manufacture and creative enterprises associated therewith. Nor in fact are our home products of the higher classes of metals less encouraging than those of our coal and of iron. We have in Salop, Montgomery, Yorkshire, Cardigan, and in the Isle of Man, and extending even into Scotland, mines of lead and of blends of great

richness, and of evident permanency, while Cornwall shows day by day that her mines of copper are all but inexhaustible. The Penstruthal district has given us a Tresavean, an Old and a New Buller, an East or West, a North and a South Basset, and now that South Frances and the Grenvilles are somewhat overshadowed in their former splendour and promise, we have creeping gradually, but no less certainly and effectively into notice, the Penstruthal and the Cathedral Copper Mines. These undertakings show unmistakable signs of early and important discoveries of mineral wealth, while their situation possesses every favourable analogy of profitable surrounding concerns which cannot otherwise than impress the earnest and practical investor with unusual significance. Again, in the district of Hayle we have the Mellanear, an almost certain prize, while South Caradon and West Seton show no signs of every approaching decadence, and West Seton also of again becoming resuscitated under the practical and vigorous management of the present executive, and particularly so after the 71. call.

81, Bishopsgate-street Within, Feb. 1.

R. TREDINNICK,
Consulting Mining Engineer.

THE FLAGSTAFF MINING COMPANY.

Sir,—In your Journal of last Saturday appear six letters respecting this mine, five of which are written with the same object—to praise Prof. Vincent and disparage the exertions of the Chairman and his other colleagues, to whom alone is due, and not to the Professor, the recovery of this company's property. As I was present at the meeting I must ask you in fairness to the Chairman, to allow me to make a few observations. One of your correspondents takes exception to the expression which he attributes to the Chairman of "poor negotiator" as applied to Prof. Vincent; another says he has always found that gentleman an "excellent negotiator;" and a third complains that no mention was made by the Chairman of the Professor's trip to Paris. My recollection of what the Chairman said is as follows:—"I cannot congratulate Professor Vincent as a negotiator, but I firmly believe that his map of and report on the mine, may be accepted as perfectly trustworthy," or words to this effect.

Considering that we were called together to hear a statement respecting our mine, and not an account of the Professor's travels, I think the Chairman was quite justified in touching only on such points as led up to the question of obtaining possession of our property. Going *seriatim* through everything the directors had done to achieve this object would have been an abuse of the patience of the shareholders. Prof. Vincent may have shown himself an excellent negotiator for other companies, but we were concerned only with what he had done for the Flagstaff, which not only amounted to *nil*, but had he succeeded in his endeavours would have burdened the company with a vast debt. It has always been clear to every man of common sense that Davis, so long as he held the mine, never had any intention of coming to terms, and this was the opinion held throughout by the Chairman. Is it true that Davis has taken from the mine upwards of 20,000 tons of ore, although his so-called ore contracts gave him but 5000 tons? Is it true that, notwithstanding this ore taken out by Davis he continued to claim upwards of 50,000 tons from the company? Is it true that Prof. Vincent himself asked to join the board in order to effect an amicable settlement with Davis, and constantly pressed such a settlement, knowing it could only be brought about by the company agreeing to that claim? Is it true that during the 10 months of fruitless negotiation conducted by Prof. Vincent, Davis has taken out and sold 3000 tons of first-class ore of the value of about 40,000? These are pertinent questions which I leave Prof. Vincent and his friends to answer. The only mistake, as far as I can see, committed by the Chairman, was that he allowed the Professor to negotiate at all with Mr. Davis, for had it not been for this unfortunate interference we should have been in possession of our property 10 months ago. I, therefore, consider, in common with a large number of shareholders, that Prof. Vincent's presence at the board bodes no good to this company.

According to your correspondent the Chairman, who was one of the originators of the plan which has rested the mine to us, but who was thwarted when he first wished to execute it, is to be blamed (why is not very clear), whilst the negotiator who entirely failed to do anything for the company is to be rewarded. This appears to me somewhat illogical. "An Independent Shareholder," after abusing the Chairman and the directors, remarks that there are thousands of persons "who think themselves quite fit to be directors of public companies so long as there are large fees (!) &c." As the present directors have never received a penny for their services, but, on the contrary, have had to pay various claims out of their own pockets, the insinuation of your correspondent is sublimely impertinent.

He adds that "what took place at the meeting appears to have convinced everybody of the unfitness of the Chairman for the post," &c. Had he been present he would have seen that the feeling was exactly the reverse, many shareholders thanking the Chairman and the directors for their labours. Perhaps his informant was one of those who hurried out of the room when the question of subscription was raised. It is impossible to read the letters to which I have referred without thinking there must have been collusion between the writers. I should have thought that Prof. Vincent's reputation did not require this vulgar sort of puffing. It is a regular case of "Save me from my friends."

FAIR PLAY.

FLAGSTAFF MINING COMPANY.

Sir,—I have read with much interest, and also with much surprise, the letters which appeared in your valuable Journal of last week; but, although some of the writers may be "large and original shareholders," they do not seem to know what the directors have been doing even for the last 15 months. I was invited to attend, and was present at the meeting of the 22nd ult., but certainly cannot endorse the remarks made in such letters upon the unfitness of Mr. W. C. Harvey to hold the position of Chairman of the company. Although Mr. Harvey may not be so fluent in speech as the late Chairman, still I feel confident that all at the meeting must agree, if they speak the truth, that the Chairman explained the acts and deeds of the directors since the present board had been constituted with a clearness and minuteness which called forth the approbation of the meeting, and a resolution was unanimously passed reposing entire confidence in the directors, and that the meeting heartily approved of the course pursued by them, and commended the conduct of the board.

Now, Sir, it appears to me, as it must do to all right thinking people, that before assertions are made those making them should ascertain the whole truth before committing them to paper, and certainly before sending that paper in the shape of a letter to a Journal of such wide circulation as that of the *Mining Journal*—I refer to the part Prof. Vincent is reported to have taken in recovering the property out of the hands of Erwin Davis.

From information I obtained at the office of the company, and from private sources, I ascertained that the Professor was averse to any hostile measures being taken against Mr. Davis to recover the property, and, therefore, he went over to New York last November to see him, as he stated that Mr. Davis would listen to whatever proposition he took out, but would not listen to any other member of the board. Well, he did nothing, but found Mr. Davis utterly impracticable, as stated in the circular of Jan. 5. And it appears the directors then did what they ought to have done long since—appointed a responsible man as agent, and sent him to Utah with full powers to regain possession of the mine, which we were informed by the Chairman in his able speech on Monday he did successfully. The Chairman has worked hard and energetically to attain this object, and he has succeeded. I know for certain that he has given a great deal of his time—as valuable, or perhaps more so, than the Professor—to the affairs of the company, and the present satisfactory position of affairs is mainly due to his exertions on behalf of the shareholders. What, then, do these large and original shareholders mean by stating that the Chairman failed in what he had undertaken? A "Shareholder" states that not only was the recent trip of the Professor to New York without pay, but he also

actually handed the board 50*l.* towards helping them over difficulties during his absence. The Professor should certainly be commended for these acts of liberality if they can be called such, but I am informed that he received for his first journey to America in April last 157*l.* 10*s.*, and for his second (his recent visit) 60*l.* As to the 50*l.*, I understand other directors have advanced considerably more than this sum for more pressing claims. But I leave the Professor to congratulate his friends in his own way, and conclude by thanking the board for their energetic policy resulting so successfully. I apologise for trespassing so much on your space.

Feb. 1.

SHAREHOLDER.

FLAGSTAFF MINING COMPANY.

Sir,—Allow me to thank those correspondents who, in last week's Journal, volunteered kindly meant words in my behalf, and to intimate to them that Mr. Harvey, while disclaiming any offensive or ill-intention—acknowledging that perhaps the phrase objected to had better been left unsaid—has in the most honourable manner asked to be allowed to withdraw the observation, and I now wish to express my appreciation of the continued labour and unflinching exertions during the past year put forth (to my personal knowledge) by Mr. Harvey, as chairman of the Flagstaff Company, and to state that both he and Sir Leopold Heath—the latter gentleman having also laboured incessantly for some years in behalf of the company—supported my efforts towards a peaceable settlement with Mr. Davis by every means in their power. Having been appointed a committee by these gentlemen to attempt an amicable arrangement—as per the general wish of the shareholders, and as per the action of a former board—I visited Mr. Davis in Paris (which mission occupied me nine days), and subsequently visited Utah, and made an inspection of the Flagstaff, including report, assays, and map, as also an examination of the books and accounts, carrying with me in the meanwhile a case written out by Mr. Harvey, with a view to preparation for aggressive measures in case such a course should become necessary and advisable. I not only did all this without any remuneration—except an allowed sum for actual expenses—but on Nov. 2 I sailed for New York, to again confront Mr. Davis with reference to the settlement of his claims against the company—this time in respect particularly to a modification of the basis of arrangement which he and I had provisionally agreed upon last April in New York, and which basis had practically been accepted (without prejudice) by my then co-directors, Sir Leopold Heath and Mr. W. C. Harvey, and which acceptance I had notified by letter to Mr. Davis. Hence I felt to be in honour bound to see him again, and to allow him an opportunity of signing a memorandum embodying terms of peaceful arrangement with the company. I, therefore, again sailed for New York as stated—this time also without remuneration—but not till after having given my full consent that aggressive steps should be at once taken—through the employment of Mr. Hunter—in case of my failure to settle with Mr. Davis. Mr. Davis would not accept the modified terms I took out, and on my calling to the board that I could not arrange with him Mr. Hunter was at once dispatched to America, but requested to remain in New York until he could receive the details of my interview with Mr. Davis, which he did. I will only say further that Mr. Ellis Pearson and Mr. Thomas Reynolds, who joined the board in September last, have not only advanced money jointly with myself to relieve the company in its trying hours, but have worked constantly and energetically in behalf of the recovery of the property by forwarding the plan introduced by Mr. Hunter and Mr. Harvey, and I feel that every shareholder of the company should be grateful for their timely support.

M. C. VINCENT.

RICHMOND MINING COMPANY.

Sir,—It is quite impossible to believe that the extraordinary excitement in the shares of this mine is brought about by realisations of timid shareholders. Nothing short of the collapse of the whole thing would justify the wild fluctuation in the shares one sees day after day. That there are people who "go into" a mine thinking to have a security as steady as Consols is well known, but these people are not found here. From the very start no property in the London Stock Market has been so subjected to the attacks of unscrupulous "bears" as the Richmond Mine. So frequently are they that one may look for them periodically. No board of directors can guard against these shameful onslaughts; it would take half the time of the staff to answer them. The only way, to my mind, is to let them have their fling, for in the end they are generally found to have done but little harm. Probably the new Stock Exchange broom may sweep away a few of the worst of these gentry. When the "bears" are found to be satisfied the next move will be a telegram—"Eureka Company withdrawn their claim"—or something of that kind of thing. Then will be seen the animal "spiritualised" into a "bull." It is absurd to suppose that the Eureka Company will go into Court—even in America—with such a case. The directors must be prepared to meet the Eureka Company should they have the impudence to go on with it, and for this purpose I think they are doing wisely in withholding the dividend due next month.

A SHAREHOLDER.

RICHMOND CONSOLIDATED MINE.

Sir,—The numerous communications from desponding shareholders in this company, in your late issues, complaining, and very naturally so, of the continuance and repeated false alarms circulated by persons whose only object is "bearing" the shares, and who successfully manage to knock them down, as was the case last week, from 9*l.*, at which I bought them, to less than 6*l.* 2*s.* 6*d.*, at which I again ventured to buy them, so as to average. No doubt it is exceedingly vexatious and annoying that such a valuable property, second to none, should be depreciated within a few days by false rumours to the incredible amount of 200,000*l.*, brought about by such scandalous reports on the Stock Exchange that the furnaces were to be shut down for three months; that the Eureka Company had made a claim of 40,000*l.* for ore illegally taken away, and this same company obtaining an injunction against the Richmond in reference to an application by the latter company respecting a patent license.

So long as shareholders can be induced to part with their shares, and by so doing playing into the hands of the very parties whose sole object is to frighten timid shareholders to part with their shares, these rumours will be repeated again and again; but to impute blame to the directors under the circumstances is extremely hard upon those gentlemen who are sufferers with ourselves, and to a much larger extent in proportion to their holding. Shareholders are themselves to blame, with whom I have no sympathy, and who by their own act encourage the very parties who alone are the cause of these repeated panics. It is quite time that some action should be taken by the directors in order to put a stop to this system of gambling by such nefarious practices. A few thousand pounds would be well spent in prosecuting such persons if known, and by so doing putting an end to these scandalous scenes; and the sooner this is done the better will it be for all parties whose interests are so prejudicially affected in consequence of these repeated rumours.

Jan. 30.

ANOTHER SHAREHOLDER.

RICHMOND MINING COMPANY.

Sir,—To illustrate the letter you were kind enough to insert in last week's Journal, I will just refer to two facts which came to light at the meeting held in November last. First, the explanation, or excuse, the directors gave for having failed to summon a meeting in the spring was that the accounts at the mine were in a state of such utter confusion that they were totally unable to present any accounts at all. Secondly, it appeared that when Mr. Probert went to San Francisco for the recovery of his health the smelting works were so mismanaged that, I think I am right in saying, they were worked without profit at all. Indeed, I believe I should not be wrong in saying they were worked at a positive loss. And we must not lose sight of the fact that Mr. Probert is at the works provisionally only, and not as permanent managing director. Now, I think these two facts alone are more than sufficient to prove what I advanced as to the utter absurdity of the present system of management—save the word! I must confess I can see little use of a board sitting in London except to do a mere routine business, and to

obtain early information to enable them, if so disposed, to take the shares of the company. The directors and secretary appear to think that shareholders have no right to any information beyond what it suits them to dole out as a matter of courtesy, but they should be made to know that they receive their salaries as masters but as servants, and that shareholders have as much right to information as directors. Your correspondent, "A Shareholder" of last week, who appears privileged to get behind the scenes, who must in that case have seen some wonderful metamorphosis performed by power of electric cable, of "bells" changed to "bears" and "bears" to "bulls," according to circumstances, and who gives us much fuller information than the directors in their circular, that if shareholders will but call upon the Chairman they will receive the greatest civility; but let me hint that it is correct information which shareholders require much more than civility. They get it?—Jan. 31.

COMMON SENSE.

SCIENCE IN ITS APPLICATION TO MINING.

Sir,—I have just read "Justicia's" diatribe of puerilities published in the Supplement to last week's Journal, and deem it utterly worthy of a serious reply. He evidently assumes to be both scientific and practical without affording any evidence that he is either. That he is an embodiment of ridiculous conceit I have not the least difficulty in believing. A maxim of ancient date enjoins the assenting "a fool according to his folly," and that is a precept which I observe in this communication. His manner of writing entitles him to no consideration or respect. His insinuations are simply contemptible. The way he treats his subject betrays the littleness of his mind, and evidently of his experience also. He does not appear to possess a sufficiently comprehensive faculty to judge of ordinary ideas, but goes off in a sort of reverie pursuing phantasms. He plays with the fringe of an object as though nothing else pertained to it. His twaddle about kid-gloved mine managers is little if anything less than idiotic, and his exposition of the difference of hardness of certain minerals, together with their specific gravities, is a pedantic scarcely excusable in a school boy. With characteristic inconsistency he denies to the managers of good mines any credit for their success, stating by implication that the mines made the men, and not the men the mines, and then adds "if properly qualified managers were appointed that more good mines would be found." Showing, therefore, most clearly that the success of mines depended upon the mode and manner of their working. If this inference be not admissible from the premises, then it must be that he considers the managers of our great west-rn mines more fortunate than able. He would like to know why it is that such a transcendently superior person as he esteems himself to be is shut up in such a place as Portugal. Portugal forsooth, as though he inhabited the whole country, or such an obscure part of it as he would prefer, should be nameless. But I presume his isolation is because no one entertains the same opinion of him that he does of himself. He writes down right twaddle, and I have no doubt his practical exploits, if he ever permitted to make any, are of the same class and character as his writings.

He failed to perceive that it was because of the absorbing interest which I considered an analytical chemist must necessarily take in his business that I concluded it was incompatible with the active and versatile qualities requisite to constitute a qualified mine manager. He would have us believe that exercise in a chemical laboratory qualifies for mine management. Of course, this is excusable in a person overshadowed by himself, and who does not know mining. I shall set him down without any more ado in the catalogue of the unqualified, as the proper conduct of mining requires diversity of faculty, science, and experience which I am fully convinced he does not possess, and, probably, never will. Everyone who is acquainted with the multifarious duties of mine management and the incessant vigilance which is requisite to its proper conduct, knows that the time spent by such a functionary in making chemical experiments, unless in very exceptional instances, is not to be lost, if not wholly so. There appears to be an almost infinite disparity between "Justicia's" ideas of mine management and what really is and involves. And I think I may reasonably set him down as one knowing little or nothing about it. He, however, appears to entertain a very exalted opinion of his own qualifications and power, but that is a very different thing to being so esteemed by others. I candidly affirm that the evidence conveyed to my mind by his letters makes an impression altogether unfavourable to him. I do not like to indulge in such a vein as this, but the ignorance and animosity betrayed by my opponent, and the utter nothingness of his letter fully justifies me in doing so; indeed, it leaves me no alternative but silence, and that, I think, would be the reverse of salutary to "Justicia" is concerned.

ROBT. KNAPP.

Llanwrst Lead Mine, Jan. 30.

DRAKEWALLS MINE, AND ITS NEW MANAGEMENT.

Sir,—I beg to ask permission for a small space in the Journal to call attention to this scheme. About 34 years ago the mining investor and public in general were assured that there were vast riches in tin wasted or systematically laid by for a future day by the old managers and their agents, and that the new managers and friends had become the purchasers of the mine and materials, which they proposed to offer to the public for 30,000*l.*, more or less, as these might be. Reports were systematically prepared, and mining investors were assured of such great discoveries in the old wasteheap or burrows that over 1,000,000*l.* worth of valuable tin ore had been discovered—the accumulation of from 50 to 60 years. It only required just a few months to erect 100 heads of stamps and these necessary dressing-floors to bring these untold riches to market, and make the adventurers great and wealthy people. My opinion being asked by shareholders in the old company who were solicited to every conceivable way to put down their tin, and make a rapid fortune, I published through the Journal a series of disinterested reports made from time to time by mine agents of great experience, whose truthfulness, care, and honesty could not be doubted. The gentlemen had been engaged from time to time by the Drakewalls directors to guide and assist us in our duties, and to whom I have publicly returned thanks on more than one occasion for the kind manner in which they had written and spoken of myself and other agents of the company. The new promoters soon pooh-poohed at this. The inspectors of the old company had been deceived, and did not understand Drakewalls tin. What was shown them as wolfram was heaps of tin put back for a future day. The scheme did not fail well, and it soon became evident that the promoters were loaded with a greater burden of shares than they were inclined to provide calls for. If the late statement of accounts be a correct one, the shareholders have been called on to pay within the short space of 3½ years, including present debts or liabilities, no less than 50,000*l.* in addition to the tin ore sold. How much of this has found its way into the promoters' pockets? The tin sales and samplings have not come up to an average of 14 tons a month, and this has been made up of dribbles. The promoters are now laying all their misfortune and error in judgment to the fall in the price of tin ore. This is not a fact, for the first year and over tin ore ruled, when properly cleaned, over 70*l.* per ton, and if we take the remainder of the time, the new company has been in work with an average price of 48*l.* for tin. How comes this lamentable failure and great loss?

I was engaged professionally a little over a year since on Drakewalls Mine on the question of land drainages to estates below the mine. I made it a point to carefully examine and note down all that was doing on the surface. Large rocks of killas, with here and there the usual small vein or branch about ½ inch in width, were being broken by the spaller, and the whole mass—killas rock, or at least—was sent to the steam stamps, there to be stamped at a great expense, and 99 per cent. of the rock so treated contained no ore. The steam stamps, with two boilers, at that time had been consuming about 5 tons of coal in 24 hours, as was reported to me by one of the engineers. In addition to this, all who know the cost of steam machinery will readily understand there are to be added—engine-men's wages, brasses, hemp, grease, oil, packing, soap, cotton waste, coal, man to wheel coal, wear and tear of stamps heads, lifters, coopers, grates, dressers, and the like—all this to pulverise and wash away atle that ought to have been cast away at first when it came

surface. them of the ing now-a-ay wen dressed, promise of fl the old burro w trial pitc hemes we formerly-

MINI

Sir,—In t letter from ertions re I am per atrick—I believe I wish to k would p says that St atrick and nrick Con instead of b from inform he cutting e hailed as generally d mark tha named it w possibly if chance of r close by, as Jan. 30.

M

Sir,—Ha Roddiss M than usual portion an low worl's dertaking, that a cone able result first ent would ap main east had open exploration character of the moe condition certainty property every depu requireme speedy wo follow suc Having trict and d rished pro Mines ad month bel of its prid this coun brilliant required I and confa a class of them generation the histor blight wi country, are prizee able witho regions.—

Sir,—I most of the most no first rem being ab rich bun very pow and dres hesitation be brouz profitabl it is in th they hav Felin. 7 who hav should t very pro I am in more su will nex gistered indicated of ore fe expense time bel Talybon of work done, and if th property machine has un nothing party, the nor I inten cious m that it Gogi

Sir,—By Mr. South is this gone c 50 per do with Thuroy I 1½ gal the str every edifyin —how and h 9 feet,

surface. I called the attention of the spallers to this—men, some of them of the old service. The reply was this—We must know nothing now-a-days; 'tis all good for labour; we can't put tin in it—away went the tramway with its load of attle to be stamped and dressed. The object of this was not clear to me, only that the promise of finding plenty of work for the stamps should be fulfilled. The old burrows still remain as they were, with the exception of a new trial pits here and there, from the fact that as soon as the sub-merged the tributers gave up work. In such gigantic schemes we now see the cause of no mine adventurers paying calls formerly.—Jan. 31.

THOMAS GREGORY.

MINING ON HALKIN MOUNTAIN, FLINTSHIRE.

SIR,—In the Supplement to the *Mining Journal* of Jan. 20 I find a letter from "Speculator," which contains some very astounding assertions respecting the above mine and others in the district, and I am personally interested in one of the mines named—Prince Patrick—I am very desirous of correcting those misrepresentations. I believe I am right in saying that the Prince Patrick Company have wished to keep the shares in their mine at a premium by puffing, but would prefer doing so by sales of ore and dividends "Speculator" says that St. Patrick sett is very large, and embraces all Prince Patrick and South Prince Patrick setts. This statement cannot be correct, as I have never heard of the sale of our mine to the St. Patrick Company, and if such were the case the St. Patrick capital, instead of being 65000l., would have to be at least multiplied by 20, from information obtained from miners in this district I learn that the cutting of the long looked for main vein in St. Patrick would be hailed as a great boon to Halkin Mountain, as hitherto it has been generally doubted whether this vein exists or not. I would also remark that if the St. Patrick sett did embrace the other setts named it would then be too extensive to be termed a little gem, and possibly if it were so the St. Patrick Company would have some chance of realising the advantage of the smelting works being so close by, as referred to by "Speculator."

Jan. 30.

ONE INTERESTED IN PRINCE PATRICK.

MINING IN FLINTSHIRE—BODIDRIS MINE.

SIR,—Having been requested by one of the proprietors of the Bodidris Mine, near Mold, to inspect the property, it is with more than usual pleasure and satisfaction, after viewing the underground portion and other operations, that I ask your permission to say a few words on the progress of this very fortunate and valuable undertaking, which I feel the more anxious to do as it so rarely happens that a concern with such glowing prospects of extensive and profitable results fairly and faithfully bears out the great expectations at first entertained in the earliest dawn of its prosperity as this mine would appear so prominently to do in every way. On one of the main east and west lodes, in which a valuable discovery was first made when I inspected some little time ago, the several levels have laid open a large extent of ore and profitable ground, and in the explorations eastward have so far increased in strength and general character that I have no doubt whatever the company possesses one of the most valuable mines ever found in this rich district. Every condition and feature, in fact, foretell in an unmistakable manner the certainty of the prediction. I am also highly pleased to see that the property is explored with such spirit and vigour as is evinced in every department, and in the necessary preparations for its future requirements, leaving nothing further to be desired in promoting its speedy welfare and the well merited success which must certainly follow such prize-worthy enterprise in all operations now carried on.

Having been for many years associated with the mines of this district and their wonderful productions in the time of its most cherished prosperity, and particularly in the case of the Westminster Mines adjoining, from which I recollect 240 tons of lead ore per month being brought to market (not even at that time in the zenith of its pride), I have the greater confidence in pointing forward to this coming event, which will shed additional lustre on the already brilliant achievements of all this range of mines situated within the required limits of geological stratification, and a new era of hope and confidence in the future, the Bodidris being essentially one of a class of mines of which now, unfortunately, but few remain, most of them having exhausted their once hidden wealth during past generations, and I fully anticipate this new and grand success in the history of mining will restore in a great measure the seeming blight which has for some years beset mining enterprise in this country, and also tend to show mining investors generally that there are prizes lying awaiting them in our own country easily attainable without the necessity of going abroad to speculate in un-sure regions.—*Prestatyn, Rhyl, Jan. 30.*

WILLIAM FRANCIS.

CARDIGANSHIRE MINES, A.D. 1877.

SIR,—I purpose by your permission to give you a few remarks on most of the mines at work in this county, and beginning with the most northern to come southward in rotation. I will, therefore, first remark on Ystrad Dyvon, where I am very much pleased at being able to inform you that they have recently discovered very rich bunches of both lead and copper ore. They are now erecting very powerful machinery for pumping, winding, drawing, crushing, and dressing, and having a good supply of surface water I have no hesitation in saying that before the end of the present year it will be brought into a state of good profits, and will continue a very profitable and productive mine for the next half-century or more. It is in the hands of three private gentlemen, who deserve the success they have met with. The next mine we will take shall be Llan Cwm Felin. This property has recently been started by a local party, who have been successful in hitting upon a good bunch of ore, and should their present prospects continue they cannot fail to have a very productive property. It has hitherto been rather bunchy, but I am inclined to believe that they have now met with something more substantial than they have ever done up to this date. We will next take the Tan-yr-Alt Mine. This has been recently registered under limited liability with a small capital, which would indicate that their wants will not be much. They have a good course of ore for a short distance, and are getting ore enough to about pay expenses. It will, however, require further opening out, and some time before much good will be realised. The next in rotation is the Tal-y-bont Silver-lead Mine, where for some time past a fair quantity of work has been carried forward, and some samplings of ore produced. The bunches in this mine sometimes make extremely rich, and if they could meet with one or two of them it would turn their property from a losing to a profitable concern, as they have good machinery for dressing, &c. Next comes Blaen Caelan Mine, which has undergone the process of liquidation, and for some months nothing was done there. It has now been purchased by a local party. The lode is of a very fine and masterly description, and is the north lode of Esgrig Her (now the Pen-y-Bwlch Mine), of which I intend treating at some length in my next. I think with judicious management that this property can be worked at a profit, and that it should open out a valuable property. *Absalom Francis, Goginan, Aberystwith, Jan. 30.*

SOUTH CONDURROW—WHEAL GRENVILLE.

SIR,—In the report of the meeting of South Condurrow it is said by Mr. Marshall, and supported by Capt. Rich, that the water from South Condurrow did not drown Wheal Grenville. By what logic is this attempted to be proved? Mr. Marshall said "Capt Rich had gone carefully into the matter, and they calculated they were raising 50 per cent. more water than Wheal Grenville." What has this to do with the question, which is not the less false? South Condurrow could not keep their mine clear, and have not yet cleared it. They had, for argument's sake, 2 gallons to draw, and they drew 1½ gallon; hence the surplus drowned Wheal Grenville. Then as to the statement that they drew 50 per cent. more, or 150 gallons for every 100 gallons by Wheal Grenville, it would, I doubt not, prove edifying to novices like myself if they would show us their figures—how their calculations are made up. Wheal Grenville engine is, and has been, going 10 strokes per minute. The length of stroke is 9 feet, pitwork 13 inches, pumping 620 gallons per minute. South

Condurrow engine has been going 11½ strokes per minute. The length of stroke is 7½ feet, pitwork 15 inches, pumping 792 gallons per minute, and not 930 per minute, or about 30 per cent. Let us have the truth, and nothing but the truth. I quite approve of "Miner's" suggestion on the equity of an arrangement about the pumping charges. Let the shareholders hold out for such, or let South Condurrow pump the water while we cut down and sink our engine-shaft until we reach the great lode. *SHAREHOLDER, Jan. 29.*

WHEAL GRENVILLE.

SIR,—I quite anticipated and was prepared for a small share of criticism on the letter which, with your courtesy, you gave insertion to in the *Journal* of Jan. 20. It has tended in no slight degree to ventilate the question as to what should be done without wasting further time under the circumstances in which the mine and the shareholders are now placed, and no one will dispute the fact that the future of Wheal Grenville, whether of prosperity or otherwise, rests entirely with the shareholders, and with those by whom they are represented in the management.

I can well sympathise in every respect with Mr. John Watson as to the circumstances under which the management was taken out of his hands, and would do my utmost to reinstate him in his former position, because I consider he was most unfairly and unjustifiably treated; still, after the penalty which the shareholders have suffered, I think he can well afford to be generous, and allow bygones to be bygones, and to console himself with the reflection that those who were chiefly instrumental in working out the oracle have paid dearly for it; and if the feelings of the majority of the shareholders could be reflected at the present moment it would be to declare the fact that not a single instance of all the promises and inducements held out at the time have been either realised or fulfilled, beyond the making of calls. With regard to the important and urgent necessity of having more powerful machinery provided at once, and to the cost of the same, to which my letter more especially referred, I am glad to notice that the committee have wisely taken action in this matter, by soliciting tenders for the supply of an 80-inch cylinder pumping engine, for delivery at the mine by March 31 next. This is unquestionably a move in the right direction, and there can be but one opinion that if this plan had been enforced and adopted long ago much valuable time would not only have been saved, but also no inconsiderable waste of money would have likewise been prevented.

On this point I differ entirely from Mr. John Watson; but if I comprehend his logic rightly, his argument being that he was opposed to incurring so heavy an expense, when the price of tin was 10l. per ton more at that period, and then considered very low, than it would realise at the present time, so far his reasoning is consistent with the price of tin only, and in no other respect. What more convincing proof can there be that for reasons well known—and if not should be known—to every shareholder that the engine-shaft has not been sunk an inch during the past twelve months. And why? Because the present engine was insufficient in power to keep the mine free from water and properly drained, and therefore it requires no argument that more efficient machinery is necessary in order to sink the shaft, and by so doing to further extend and develop the working of the mine. But many parties will, no doubt, be of opinion that this will be a very expensive operation to carry out. No doubt it will be so; but such persons must make choice of two evils, either to go grumbling on as they have been doing in the past, and run the risk of another drowning, or to support the committee in providing ample machinery for all contingencies, which is a question for the decision of the shareholders only. To erect an 80-inch cylinder pumping engine, and all the necessary alterations and requirements in connection therewith, will entail a considerable expenditure, and I firmly believe it will even exceed the amount estimated by me; and if the mine is put into the condition which I have sketched out at a sum less than 10,000l., the shareholders will have good reason to congratulate themselves on having achieved such a result, and I thoroughly believe that they will ultimately be well rewarded for their pluck and perseverance, and that with the certainty of a reaction which must inevitably take place (when the sickening Eastern Question is got rid of) in the general trade of the country, and which will tend in no slight degree to raise the price of tin from its present depressed value, this will so far react upon the value of Wheal Grenville shares that, in the partly expressed words of Mr. John Watson, every shareholder should declare—"I have still great faith in the mine. I will show my continued confidence in the same by purchasing more shares, which I feel convinced will before long stand at four or even five times their present nominal value."

Mr. Editor, if the shareholders one and all determinedly carry out in their entirety all these suggestions the future of Wheal Grenville need not be despaired of; but before this can be brought about a great deal has to be accomplished, and the patience of the shareholders will be tried. I will, therefore, conclude by urging the shareholders as well as the executive that union is strength, and that by a long pull, a strong pull, and a pull altogether the moral certainty will be a successful and triumphant issue. *CREDE, Lloyd's, Royal Exchange, Jan. 29.*

WHEAL GRENVILLE, AND ITS MANAGEMENT.

SIR,—Master Watson and my Brother Benny Puppethead are intimate friends, and have been ever since I was a little boy. Now, Mr. Editor, Our Ben has seen a great deal, and often been in the company of gentlemen. We often used to wonder at the amount of fine words he could use. How often has he jumped up in bed to put down a note of something to send to the gentleman in London I cannot say, but we young ones thought he had Mr. Watson on the brain. Now we have a School Board in Camborne, and before that Mr. Basset kindly built a miners' club-house, where we miners could meet in an evening when we were not working. We talk over Dolcoath, Wheal Grenville, or any other mine, and if we do not learn something by exchange of ideas we might as well have lived in Benny's days of no school but Sunday school. We have questioned, or, as learned men say, criticised, the management of Wheal Grenville. Capt. Hodge came to the Camborne district (although born in the neighbourhood) after many years of absence a stranger. He worked many years in Wheal Basset—the training shop of many good miners. He came all but a stranger, but has made numerous friends. The men do not dislike him, although he drives hard bargains; but, when his word has passed and the men agreed, they go to work with a will and determination, and get all they can—and nobody is better pleased to see those who deserve it get more money than Capt. Hodge; for is not the mine more rapidly developed, and are not the returns increased, while the fixed charges are the same? The returns have increased, and that considerably, and how Capt. Hodge has done it is the puzzle to Our Benny and the London gentleman, for the place to dress the tin when raised is only like a cockpit. We have faith the returns will not only be kept up, but further increase as soon as the water is out of the mine. What has the present management to do with the present state of the mine? Had Brother Benny advised Mr. Watson to put up a big engine three years ago the mine would probably now have been down to the 200 ft. level, and second only to Dolcoath as a great and durable mine. It is well known South Condurrow would have given a dividend of 8s. per share but for the floods which have drowned the bottom of the mine for nearly two months. If Our Benny were to tell me the tin will all cut out before it comes into Grenville I should say—"Go's home, thee knows nothing." Wheal Grenville will become under the present spirited management, if carried on as proposed, one of the greatest mines south of Dolcoath.

What has the flooding of the mine to do with the management? Were the committee the bottle-holders of the heavens—whose two months of incessant rains have drowned so many mines—if so blame them; if not, then as men cease your twaddling, or assist us over our difficulties. I would ask Mr. Watson or my Brother Benny if ever Wheal Grenville engine (old and decrepit as it is) ever pumped 620 gallons per minute—10 strokes of 9 ft., pumps 13 in., and that without interruption for more than a month before, save changing of a bucket occasionally? I can tell Mr. Watson and my Brother it

never has. More might be done were it not for the long line of flat-roads. Is there no credit due here? The mine is out of debt—the shareholders can sleep in peace. Such is the confidence in the mine that one gentleman has offered to deliver an 80-in. engine on it, and take the forfeited shares in payment, so that no large call will be required. If the shareholders of Wheal Grenville see any difference in opinion between me and Brother put it down to Mr. Basset's club-house and the School Board. *JACKY PUPPETHEAD, The Beacon, Camborne.*

WHEAL GRENVILLE.

SIR,—There is a little circumstance relating to the former agents, and which I intended to have alluded to in my last letter, but writing in a hurry I overlooked it. Perhaps you will kindly allow me a short space to refer to it now.

In August, 1875, Capt. Josiah Thomas, of Dolcoath Mine, inspected Wheal Grenville. Mr. Lane drew up 19 questions, which I was instructed to put to Capt. Thomas, and amongst them was the following:—"What do you value the reserves of tin ground at?" To this Capt. Thomas replied as follows:—"With the comparatively small amount of ground that has yet been opened upon the flat lode, especially in the deepest and most productive part, it is difficult to estimate the value of the reserves with anything like accuracy." This was written on Sept. 1, 1875, at which date, according to Captain Thomas's statement, a comparatively small amount of ground had been opened on the flat, or South Condurrow, lode. In January, 1876, the former agents were discharged. In March, 1876, as reported in the *Journal*, the Chairman of the company informed the shareholders that those agents had left thousands or tens of thousands of tons of tinstuff standing in the mine, and which it would take five years to exhaust. Now, if what Capt. Thomas stated in September, 1875, was correct, and no one who knows that gentleman will for a moment question his correctness, it follows that from September, 1875, to January, 1876, a period of four months only, the former agents must have laid open the chief portion of the enormous reserves alluded to by the Chairman of the company in March, 1876. This was displaying an amount of activity and progress which one does not often see or hear of in mining affairs. The committee were constrained to come to the conclusion that the discharge of the men who did this work was absolutely necessary to bring the company's affairs to a satisfactory state, but I think that after what I have now stated any unprejudiced person will say that, whatever the other shortcomings of the late agents, a want of energy could not be laid to their charge.—*Jan. 31.*

JOHN WATSON.

WHEAL GRENVILLE.

SIR,—Among the numerous writers remarking on Wheal Grenville there is one that attracted my attention ("A Mine Agent") in the Supplement of the *Journal* of Jan. 6. The latter part of his remarks contains the following:—"The company's secretary is pretty well acquainted, from his long experience with the merchants, as to where the best article is to be obtained at the lowest possible price; this advice may be useful in their deliberations." May I ask him (the Secretary) whether he had samples of articles to compare with the prices? That would be the most business-like way to know where to get at the articles for the benefit of the shareholders.—*Jan. 31.*

COMMISSION.

WHEAL GRENVILLE.

SIR,—The advertisement appearing in the *Mining Journal* of last week inviting tenders for the erection of a new engine is, to my mind, an improper anticipation of the wishes of the shareholders, and tells me that the committee are not so capable to deal with important matters that may from time to time come before them as we have been led to expect. My idea is that the shareholders should have been consulted before, not after the appearance of such a sweeping intimation of a deep dive into our pockets. The question of more powerful pumping power has been before the shareholders for a long time past, and I believe our agent has been, possibly for obvious reasons, most energetic in his endeavours to induce the committee to incur the serious outlay; but I happen to know that the opinions of far more practical men have been taken that are averse to incurring the enormous expense of a new 80-in. engine, and that the present engine can be made competent to do all that is necessary for some time to come, and I have reasons to believe that the parties suggested by Mr. Lane to report upon the machinery for him has given an opinion in favour of the present engine. Judging from precedents, I am inclined to believe that 10,000l. would not more than cover the cost of a large engine, house, boiler-houses, pit-work, &c., go to work as economically as we may. It is a serious matter, and as I cannot be present at the meeting some time next week, my impression as a small shareholder is, that the adventurers should hesitate to adopt the recommendations of the committee if they are bent on advising the outlay of many thousands of pounds when hundreds may do all that is required. *SHAREHOLDER, Plymouth, Jan. 31.*

EAST LOVELL MINE.

SIR,—After my letter referring to the above mine was inserted in your columns I rather expected that a report would appear from the captain in last week's *Journal*. I am satisfied that this mine would soon take a good position in the market if the general public were more familiar with its prospects. Will my co-shareholders join with me in calling a special meeting for that purpose? *Great St. Helen's, Feb. 2.*

E. J. BARTLETT.

ST. AGNES MINING DISTRICT.

SIR,—From time to time I have sent you brief statements about mining districts in Cornwall. I desire now to give you for the *Mining Journal* a few notes respecting that of St. Agnes. In years gone by St. Agnes, like many other mining parishes in this county, was more prosperous than at present. At this time the mines at work bear a small proportion to the number at work about 35 years ago, one reason for which is found in the common subject for complaint—the low price of tin, which is the staple produce of the parish, although there have been several very productive copper mines within it. The number of mines in the parish is considerable, but only a few are now in operation—first, Wheal Kitty, under the management of Capt. Teague, of Tincroft and other mines. This is a tin mine, and, I believe, always was so from its commencement. Notwithstanding the miserable price paid for tin, a small profit, I believe, is made on the work; and, if in these times any profit can be made out of a tin mine, we must call it good. Adjoining Wheal Kitty, at the north, is situated mine No. 2, called Penhalls, also a tin mine, about self-supporting—very old, like Wheal Kitty. These mines are remarkable for the great number of lodes contained in them, and the immense amount of surface indications of ancient trials on the "backs." They are also remarkable for the numerous "heaves" by cross-courses. Eastward from Wheal Kitty is situated No. 3—Blue Hills Mine—in the Duchy land of Trevelias, also a very old mine, but not very deep. This mine and Penhalls are under the management of Capt. L. Bennetts. Blue Hills yields tin only, but not sufficient to meet the costs, but the prospects are said to be good. Like in several other mines, operations have been slightly impeded by the late floods.

West of Wheal Kitty there is New St. Agnes (No. 4), under the management of Capt. Vivian—a good miner. I am pleased to hear that the prospects are cheering. It is to be hoped the company will be reimbursed their outlay, and something more. The position of this mine is good for the production of tin, of which, I doubt not, abundance will be raised at greater depth.

No. 5 is a tin mine on the western side of "The Beacon," called Wheal Coates, where, despite the low price of tin, the company make a profit on which I congratulate them. Further west is a mine called New Wheal Charlotta (No. 6), a tin and copper mine, worked under the management of Mr. Elisha Tregellas, of St. Agnes—a gentleman deserving of the proposed testimonial for the perseverance displayed in forming a company to work it in these difficult times. But I hear that very few men are employed—for want of "tin."

No. 7, East Tywarnhalls, is a promising copper mine in Duchy land, near Mount Hawke, under the management of Capt. Champion,

a son of the late Capt. Champion, of East Wheel Rose. The specimens of copper ore seen at the manager's house indicate success in the development of the lode. The mine is shallow, no steam-power in use, but an engine must be erected to work with good effect. No. 8, North Treskerby, is a mine near Scortier Railway Station, which if worked with proper energy would doubtless yield profit, but at present the company, like the machinery on the mine, seem all asleep. If the company cannot raise the funds to work properly would it not be well to sell the mine to those who will, and are able to do justice to it?

No. 9 is Tywarhaile, a copper and tin mine, slightly worked. I am told, above the adit. This mine has yielded immense quantities of copper ore under different companies. The mines constituting Tywarhaile were previously called South Towan (once rich), United Hills, and Wheel Charles. They were lastly worked about 10 or 15 years ago, under the management of Capt. Hampton, but they went down with a heavy loss. Do not try them again.

I think that I have named all the mines in the parish in which anything is being done. I will now give you the names of the mines which are idle:—Wheal Prudence, Prince Royal, South Kitty, Wheal Liberty, Wheal Mithian, Wheal Valley, Burrow and Butson—*alias* Wheal Davey, Old East Tywarhaile, Great West Chiverton, Penwinnick, Polbreen, Wheal Harriet, Wheal Friendly, Wheal Coit, Polberron (a mine which was worked for a very long period for tin, and yielded large profits when tin was high), West Polberron, Wheal Freedom, Great Wheal Charlotte (once a very rich copper mine), Wheal Towan (once immensely profitable from yield of copper), Wheal Ellen, East Ellen, South Ellen, Stencose and Mawla United, North Hallenbeagle, Tregullow Consols, East Treskerby, Prince Coburg, East Wheal Music, Victoria, East Downs, Wheal Rose, Wheal Music, and Trenithick. The last-named is regarded as the best for investment in the parish of St. Agnes. R. SYMONS.

Truro, Jan. 31.

THE MURCHISON TESTIMONIAL.

SIR,—Since I wrote you on this subject, a few weeks ago, I have been much pleased to see my appeal so well responded to by your correspondents; and, from the general approval which the suggestion has met with, I have no doubt but the result will be highly satisfactory to the recipient of the intended honour. I hope soon to be able to inform you of the names of an influential committee for carrying out the matter.—Jan. 31. S.

(For remainder of Original Correspondence, see to-day's Journal.)

Meetings of Public Companies.

NEW QUEBRADA COMPANY.

An ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Friday, Jan. 26.—Mr. N. LEABOYD in the chair.

The notice calling the meeting was read by Mr. T. G. GILLESPIE, the secretary. The report of the directors (published in last week's Journal) was taken as read.

The CHAIRMAN: Gentlemen, it is with satisfaction and pleasure that your directors meet you again, for the purpose of laying before you a statement of accounts and a report of their proceedings since they last had the pleasure of meeting you. I will assume that the shareholders before me are acquainted with the general circumstances and constitution of the company, and with the character of the relations subsisting between this company and the Bolivar Railway Company, that is making the railway from the mines to the coast; and I will content myself with a very short statement and review of what we have been doing since we last met, which is something short of six months ago. At that time I see, on referring to the report of what was stated to you then, I told you that the railway had been made to a point 45 miles from Tucacas. There is a plan on the wall, by following which you will be better able to understand my explanations. The railway had then been made from Tucacas to Prados. We are now able to report that by the end of the year it had reached a point just above La Luz, or a distance of about 53 miles from the coast, thus showing that 8 miles of railway had been constructed during the six months. Now, gentlemen, although you may not think that a very rapid rate of progress, yet having regard to the climate, the condition of labour, and the other difficulties with which the contractors have had to contend, we do not think it is one of which we have any right to complain; and the contractors tell us to-day, as they told us six months ago, that by the end of March—this is the extended limit—they have every reason to think the railway will be completed. In our report to you we mentioned the yet unconstructed portion of the line as being the most difficult of all. It must not at all be inferred that we think there are any serious difficulties, the successful encountering of which is a matter of which there may be any doubt. There is every reason to believe that the difficulties have been overcome—I mean that all the engineering difficulties have been overcome—and that although there is more work to be done on that small section of the line than any other, yet I think there are no engineering difficulties remaining in it at all matter of doubt. You will believe that to be the case when I tell you that the contractor's report to the Bolivar Railway Company, and the Bolivar Railway Company's report to us, say that there is every reason to believe that the whole of the line will have been completed within about two months from the present time. It was thought desirable, gentlemen, formally to open the line on its arrival at La Luz, which is substantially the end of the mine, and there were many considerations which led the Bolivar Railway Company to the conclusion that it was very desirable that from that point the line itself and the rolling stock should be in their hands. Therefore, they have made arrangements for the formal opening of the line on its arrival at La Luz. With this view they have paid a compliment to the President of the Republic by asking him formally to open it. They have sent out a locomotive superintendent with an efficient staff of men, and they have deputed one of their own board, Mr. Mercer, to proceed to Venezuela to attend the President and be present at the ceremonial of opening; and they have also requested him, while in Venezuela, to make a careful examination of all the arrangements made for the carrying out of the contract between the two companies. Mr. Mercer is now in Venezuela, or probably he is so by this time, and I am not quite sure that the railway has not been formally opened, but whether it be open or not it will be so in a few days from the present time. Now, gentlemen, in this forward condition of the railway you may very well ask us what we have been doing at the mines, and what arrangements we have been making by which to secure the constant supply of copper for carriage for the railway as soon as it is completed. First, what have we been doing you ask? And we propose to answer that question. I think that when we last met we reported that the first cargo of copper was then on the ocean on its way to this country. That cargo arrived in due course, and was disposed of with the result stated in the report. Another cargo of ore is now on its way to this country. A third ship had arrived when we received our last despatches from Venezuela for the same purpose, and a fourth ship has also been chartered. I think I expressed the opinion of the board at your last meeting on this question when I said that the carrying of ore on donkeys' backs from the mine was very expensive work, but if we were to have the railway completed as far as La Luz within the next three or four months, I did not think it would be well to push on sending the ore down to the intermediate places. That was not only my individual opinion, but the collective opinion of the board—that in the possible early completion of the railway it was not desirable to be incurring the expense of sending down large quantities of ore to intermediate places, and, gentlemen, we have been more than justified in that conclusion; therefore, while we have been sending down in this way a quantity of ore to meet our immediate financial requirements to satisfy the expectations of our shareholders and to fulfil our promise to Messrs. Matheson and Co., also to test the completeness of the arrangements for the carriage, and for the loading and the shipment of ore, we have not thought it desirable to do this to any very large extent. Therefore, though these cargoes have been shipped, or arranged for shipment, it is probable that we shall not do very much more of that until the line is positively completed. We have at present ore got out of the mine ready for shipment as soon as the railway is completed, to the amount of about 5000 tons, and we have now a regular output of something like 800 or 900 tons per month. This probably you may remember is only about half of what we shall have to send down as soon as the railway is completed, according to our contract with the railway company, but it was the advice of our late consulting engineer, Mr. Forbes, that it was better to be concentrating attention on the opening of new ground for regular stopping than getting out large quantities of ore. Now, gentlemen, having told you what we have done, I recur to the enquiry which I have anticipated—"What are you going to do? What means are you taking by which to secure the regular fulfilment of your contract with the Bolivar Railway Company?" That contract imposes upon us undoubtedly a formidable obligation. It imposes upon us an obligation to supply the railway company for carriage with at least 20,000 tons of ore per annum. In the first place let me relieve your anxieties by saying that we have not told you that the obligation is not to be concentrated upon doing all we can to secure its early fulfilment. We have an arrangement with the Bolivar Company that such ore as we are sending down now before the railway is completed shall be taken if we so require it, into the account of the first year's obligation. I hope it will not be necessary for us to avail ourselves of that arrangement, but if so, we have it to fall back upon, and we thought it a wise thing to do, because we have been told that our difficulties will be with the first year's production, and if we get over that, and get the mines into order, there is no doubt about our being able to satisfy the contract in subsequent years. We believe there is no difficulty in the first year. I come back again to the enquiry—"What are you going to do?" I have told you as to the quantity of ore that has been got out of the mines. I have not told you anything about its quality. You have of course seen by the re-

port what was the quality of the copper that has already been brought down and sold. It did not realise the high anticipations that some of us had formed, but yet we do not think it was very unsatisfactory. I am frank, however, to tell you that this is the point on which our information is the least perfect—as to the quality of our ore. Do not misunderstand me as throwing any doubt upon the subject. Still less am I contradicting anything that has been said to you in any previous year, but our evidence to-day is very much what our evidence was two or three years ago, and we do feel that we ought to know more than we do as to the quality of the ore. We ought to have better geographical knowledge of the position of our lodes, and of the best way in which the mines can be worked, and at present we have no complete—at any rate no satisfactory—survey of the mines. Now, we feel that we ought not while we see the railway company preparing itself in every possible way for the fulfilment of its contract to leave anything undone that we can do by which to secure the fulfilment of the contract on our part. We have hitherto been working under the advice of Mr. David Forbes, whom we always found an acute and able man, whose best advice and experience were always cheerfully and readily placed at the disposal of the board, but he always felt and constantly expressed the need there was for a better survey of the mines, and a more complete knowledge of them from a scientific point of view. We have recently been deprived by death of Mr. Forbes' services, and I take this opportunity of saying that no man more faithfully or more ably than he ever performed the duties of a consulting mining engineer. His death has imposed upon us the necessity of appointing a successor to that office, and we have thought that we ought to take advantage of such an opportunity as this just now we feel we must have. Therefore, we made it a condition that anyone receiving that appointment should go out to Venezuela, see the mines for himself, make a complete survey of them, and determine as the result of his own observation of them whether the ore should be sent down in their native condition, or be dressed or smelted, and if either of the two latter, then to make all needful arrangements for the operation. Therefore, after much thought and enquiry, we determined to make that a condition of the appointment of Mr. Forbes' successor. We have succeeded in doing so with a gentleman who is, from all we hear, entitled to the fullest confidence of the board and of the proprietors. I refer to Mr. John Darlington. An arrangement has already been made subject to your approval at this meeting, under which Mr. Darlington holds the office on the same terms as those on which Mr. Forbes held it. He engages at once to go out to the mines and make a complete survey, and lay before the board a plan of their future working. I trust this will meet with the approval of the shareholders, and if so Mr. Darlington, who has suspended his preparations until after this meeting, that he may know he goes with the full consent and approval of the proprietors, will leave as once for Venezuela. There is nothing more that I have to tell you. If anything occurs to you which you would like information, I shall be only too glad to give you it. I think I may say that we are entering upon a new phase of our experience in connection with this company. In all probability this is the last time we shall meet before the completion of the railway, and until the state of working we have so long anticipated is actually realised. But, gentlemen, it is too early for us to be jubilant until we are able to talk to you about a dividend. I think, although we have not attained all we hope for, we may fairly congratulate ourselves upon the position we have attained. When I contrast the condition of things to-day with what it was four or five years ago, when I first attended the meetings of this company, I think there is very much room indeed for congratulation. At that time our capital was wasted, and nothing done. Our money was gone, and practically there was nothing to show for it. Our meetings were mere bare gardens. We heard scarcely anything but personal recriminations and contentions. We were involved in litigation with reference to all the company was doing or had ever done, and there seemed to be little hope of our ever being extricated from the confusion of things which we had got into. Now, gentlemen, I think I may say without fear of contradiction that we have not the slightest root of bitterness springing up to trouble us. We have no litigation, we have no contention of any kind whatever, and our works are proceeding. We have nothing to do but address ourselves to our real work, and our real work is being accomplished, if not as rapidly as we could desire yet surely, and I think with everything about it that is hopeful and encouraging, so I think I may with pleasure congratulate the shareholders upon the position of the company, and may thus give to them feelings from those with which I did the first time I had this duty to perform the adoption of the report which has been laid before you. (Loud cheers.)

Mr. F. H. HEMMING (deputy chairman) said he had great pleasure in seconding the resolution.

Colonel MULLOCK thought the report of the directors was enough to throw cold water on the concern, but he was glad to hear the speech of the Chairman, who placed matters in a better light. There was one point on which the Chairman had not given information. He understood that the railway was brought as far as La Luz, which was five miles from the Quebrada Mine.

The CHAIRMAN: Between four and five miles.

Col. MULLOCK said there was another mine which he understood was still nearer to La Luz, called Titara Mine, which he believed was the richest of all the company's holdings. He understood that mine was only about three miles from La Luz, and there was a good road between the two places, and he should like to know what difficulty the directors found in establishing direct communication between La Luz and Titara Mine. He had himself had some fine specimens from that mine which produced 40 or 50 per cent. of copper while the ore at Titara was getting at present only gave about 20 per cent. of copper. Why did the directors wait until the railway ran into the heart of the mine before they sent down more ore? It appeared to him that they might at once commence regular operations at the Titara Mine. The shareholders were perfectly in the dark with respect to that mine, which might just as well be in the moon. (A laugh.) He would ask whether there was any gentleman in the room who had ever been to Venezuela, and who would be good enough to state to the meeting the truth? He would also ask the directors, when they sent out orders for the last shipment of ore to be forwarded to this country, whether they gave instructions that the ore so sent should be of a high grade or a low grade, or were any orders at all sent out on the subject, or it seemed to him that the manager had not obeyed the order if any such order was sent? It seemed to him that the lowest grade ore was sent. He had seen several samples which he had looked over in the office of the company, and he saw they ranged from 25 to 60 per cent. He thought if any more ore were sent down perhaps it would be better to send the 60 per cent. ore rather than the 25 or 30 per cent. ore. He should like to know whether the directors had given positive orders for a continuous supply of ore to be sent down by donkeys, or whether they would wait until the railway was finished to the mine?

Mr. THOMAS CLEMENTS (Kingston-on-Thames) said the Chairman had stated that the directors had received a cargo of ore, with the "results stated in the report." Now, there was nothing in the report to inform shareholders of the net result of the cargo; it simply stated that it yielded a certain percentage per unit. Perhaps the directors would be good enough to state to the meeting the result of the sale—of course, taking into account the expenses. He found that the transport of ore for the six months came to 2593. 3d. 7d., and he found the only asset to meet that was Boulton and Co.; he supposed they were the brokers?

The CHAIRMAN: No, our agents in Venezuela.

Mr. CLEMENTS: Well, at any rate he did not see any asset against that amount except the item of 2117. 12s. 4d., leaving a loss apparently of over 600l.

The CHAIRMAN: That item has nothing to do with it.

Mr. CLEMENTS: I would like to reply would state the net results, after taking into account the transport and other expenses. He wished to ask also with respect to the portion of the railway between La Luz and the terminus—that was to say, what work, if any, had been done upon that portion of the line, which had been referred to as the most difficult portion of the line for the contractors? That was important, because he had heard rumours with respect to that portion, and the difficulties which Messrs. Matheson had to undertake with reference to it, and the question arose whether something had not been already done by the Bolivar Railway Company, and the New Quebrada Company, and the Bolivar Railway Company even before the contract had been fulfilled by the contractors. He knew the question had been discussed at the board—that was, the question of amalgamation. He did not wish to be out of order, but, with the Chairman's permission, he should like to allude to the question, because it vitally affected the interests of this company in the future, and it must come before the shareholders eventually. He wished publicly to state, as a shareholder himself, and as representing the opinion of many shareholders, with respect to this question of amalgamation, that that question must not be entertained by the board. He did not make the observation dictatorial or offensively. It was felt by many shareholders that the board should not follow the course which had been pursued by many companies—to get an agreement out and dried, and then come before the shareholders and say it would be detrimental to the interests of the company if it were not adopted. Therefore, he wished to offer his opinion in advance upon the question of amalgamation, which he understood had been discussed at the board, and to state that he thought no question of amalgamation between the Bolivar Railway Company and the New Quebrada Company should be discussed until the contract between the two companies had been strictly fulfilled. This was most important, because unless the New Quebrada Company insisted upon the strict fulfilment of the contract with the railway company they might depend upon it that the New Quebrada Company would be considerably losers. Therefore, he respectfully offered the directors his opinion in advance—that they should not enter into any amalgamation unless they first consulted the shareholders upon the point. There was one item which he must allude to, because it struck him very forcibly. If the shareholders were extravagant upon large matters, the directors would be right to infer that they were extravagant upon small matters. The directors were allowed to be trifling on 20 guineas for the auditors' fees for the half-year, which was 40 guineas for the year. When they considered the comparatively passive condition of the company, and that most of the audit must consist of mere clerical work, he certainly did consider the auditors' fees of 40 guineas somewhat extravagant.

Mr. WARD said that when the Chairman replied he hoped the shareholders would hear something regarding the prospect of a dividend. He had once before deprecially expressed his little disappointment at the meagreness and somewhat bald nature of the report of the directors. It was true that the directors were accustomed to issue a report of what took place at these meetings; were it not for that the shareholders at a distance would scarcely know what was going on. There was one thing which was not quite clear to his mind—the quantity of ore which was already disposable. The shareholders had not been informed of the tonnage of the ships, nor whether the one cargo which had been shipped, or the one on the way, was minus or plus the 5000 tons stored up. In the previous report the directors intimated their intention not to store ore at any intermediate place, and he understood that if they got to La Luz they would ship the ore regularly. He thought that if the Chairman would give them some little information relative to the debentures. An undertaking was given by a great firm that they would take up all the debentures which were not taken by the shareholders, and he should like to know to what extent the debentures had been taken by the shareholders. In the circular regarding the debentures it was stated that up to the time of the proposed new issue only 30,000l. were issued. Now, he could not find that amount in the report. In the present report he found that the directors had stated that it was like an explanation as to what that meant. It was very satisfactory to hear that, because at the previous meeting a good deal of difficulty was anticipated from that quarter. He was also pleased to hear of the appointment of Mr. Darlington. He had long known Mr. Darlington as a mining engineer of great repute, and he had heard with great satisfaction that he had consented to act. He regretted that the directors did not at once appoint him, without waiting to bring the matter before the shareholders. As far as his own judgment went, he believed Mr. Darlington was a careful mining engineer as they could have selected.

A SHAREHOLDER was surprised to find the board knew so little about their mines, as Capt. Brown some years ago had given a lengthy report upon them.

Prof. M. C. VINCENT, F.G.S., F.R.G.S., said that though he had been asked on various occasions during the last 12 or 14 years to

address the meetings of this company, and to make some statement with regard to his visit to the property, yet he had never deemed it of particular importance to do so, from the fact that for a great part of the time which had elapsed since the formation of the company it had either been in the midst of railway embarrasments or litigation, and, as he was neither a civil engineer nor a lawyer, he felt that any remarks of his under the circumstances would be of no practical value. (Cheers and laughter.) But now they had come to the substantial point of getting the facts of his observations might be of some service. He would begin by saying that as long ago as 1861 he paid a professional visit to the so-called Quebrada Mines. Now, the property comprised not a single mine but a series of mines, one of which was of high individual value. The great "ore course" characterised the property was not only boldly declared and of tremendous volume, but extended through a lineal distance of, perhaps, ten miles. The southern point of working development on the great "mineralised band" was at the mine called "Quebrada" (from quebrar, to break), the original display of ore having been observed protruding from the broken surface of a ravine (or "quebrada"), which transversely cuts the line of the ore. In a nearly due north course, and about three miles from the Quebrada, was to be found the mine known as the Titara, and some three miles further to the northward was that called the Cumagura, these three mines being nearly in a direct line, and at a short distance to the south-east of this assemblage was the San Antonio, evidently within the same mineral area. The Professor thought it likely that all these mines—having as they had, a southerly aspect—marked originally but the points or localities of distinct outcropping masses of ore, which had been laid bare through erosion of the rocks, such erosion or disintegration having been induced by the opposite effects of heavy rainfalls, followed by the intense downpour of the sun's rays. He thought that in such case the points of the mines could not, perhaps, be so confidently taken as noting the axial line of strength of the great metal-making energy of the locality; that external indications led to the impression of withstanding the enormous productive power and commercial value of the mine, or openings named, even heavier and richer emboliments of ore might be looked for to the eastward. He had taken unusual pains in working up both the scientific and economic geology of this region, having spent over eight weeks in the immediate vicinity of the mines themselves, and he thought that before going into the mineralogical characters of the ore, it would be of interest to the shareholders to know that the formation belonged to the Neocomian (lower cretaceous) horizon represented in the region of Bilbao and the Ebro Valley, in Spain, a section well known for its mineral resources. The company's group of adits occur in the midst of massive gneissic rocks, on the south and south-western flank of not exactly a mountain, but an elevation of considerable prominence; and this brought him to observe upon a most important feature of the property. The adit level, or entrance to the so-called Quebrada Mine, pierces the ore in the easternment face of the ravine, at a point distinctly above the level of the water, and they had such abundance of hard-wood fuel immediately at hand, would be found in their particular case an ore of large value. At the time he measured the great pyritous mass alluded to he also inspected and made assays of over 400 tons of grey oxide lying dressed in front of the entrance to the adit. This gave him something in excess of 32 per cent. of metallic copper, while about 200 tons more of similar mineral broken in the mine, and not yet "brought to day," afforded him 30½ per cent. Three assays of this grey ore showed immense traces of silver. Independently of the yellow and grey ores, there were large quantities of brown and black oxides, not to mention other forms, all of exceedingly favourable description. The two first specified gave him over 60 per cent. of metallic copper. Passing to the Titara, he found the lode distinct and clear, and while not showing such marked volumes as the Quebrada opening the ore was of a remarkably fine type; it was red oxide, and gave as high as 76 per cent. of metallic copper. And he reminded them that the typical—that is the highest chemical condition of the ore—is indicated by 28 per cent. of copper and 11½ per cent. of oxygen, which would approach as the significance of his remarks. (The Professor then suggested whether the company were in possession of such animals, it would not be advisable—there being a good mule road from La Luz to the Titara, which was only about 3½ miles distant, to bring down a cargo of ore thence to the latter point, *en route* for Swansea, in order that this Titara ore might also be tested. But he did not wish in the slightest to influence the board in their general plan, as he considered their conduct of the company's affairs most able and praiseworthy.) After remarking upon the ore of the Cumagura Mine, which was as far as he could see into the workings, of a good truth, the Professor came some merit by observing that, to tell the truth, the adit of the Cumagura (having been constructed after the old Spanish style) was so low that he had the greatest possible trouble getting even a short distance into it, but he humbly observed, that having regard to his "tremendous inches" he did not know that he was right because of the physical difficulties he experienced on that occasion in disparaging the condition of the Cumagura Mine. He had gone into an equation of the ores—that is, from the results of more than 40 assays, from different extent of the mineral, and respects the charge of metal present—he had come to the conclusion that the might rely upon a mean average of 32 per cent. of dressing, of something over 26 per cent. of metallic copper, and would slowly assuring the meeting that, in his humble opinion, the company had in the seven mines specified an aggregate amount of metallic wealth—above the water line—impossible of exhaustion for a hundred years to come.

A SHAREHOLDER: If the directors can afford a seat at the board I think they should offer it to Prof. Vincent. (Hear, hear.)

The CHAIRMAN: I would assume there were no further questions to be put, and he would proceed to answer those which had already been asked. He was sure he expressed the feelings of the shareholders as well as the feelings of the board when he tendered their thanks to Prof. Vincent for the ready way in which he had laid before the shareholders the information which he possessed as to the property. The directors were glad at all times to avail themselves of any information which might be given to them which would enable them to appreciate its duties which were before them, and the information of a gentleman who had actually seen and examined the property for himself, and who had the advantage of scientific knowledge and research, was of exceedingly valuable assistance. As to the election of directors was in the hands of the shareholders themselves. The directors were sitting at the board simply because the shareholders had chosen place them there, and any gentleman whom the shareholders might elect as directors would gladly welcome as one of their colleagues. With regard to the observation which had been made as to the auditors' fees, he would observe that the was a matter which was entirely in the hands of the shareholders and not in the hands of the directors. The auditors were to receive 20 guineas for the half-year, and the directors had paid that amount, and he must say he thought that amount was not a farthing too much. (Hear, hear.) The auditors had had to audit not only the home accounts but also the Venezuelan accounts item by item, and he did not think the amount too much if they were to have a proper professional audit, and that audit was to be worth anything. (Hear, hear.) As regards the amalgamation the directors were much obliged to Mr. Clements for his attention to it, and the very course way in which he had pointed out the directors' duty of not entering into any contract for the amalgamation of the companies without first coming before the shareholders. He had not had the pleasure of hearing Mr. Clements say much at previous meetings, but those shareholders who had been in the habit of attending them knew that the directors had not done anything of importance without previously bringing it before the shareholders and obtaining their sanction. One shareholder thought the directors might have sent out Mr. Darlington without consulting the shareholders, and here was some other shareholder expressing the fear that perhaps the directors might enter into some arrangement of infinitely greater importance without bringing it before the shareholders. (A laugh.) But the idea that the directors could enter into a contract by which to amalgamate this company with another, or by which they could merge the interests of the company with those of any other great undertaking without coming before the shareholders, was he going to say, almost amusing. Mr. Clements said the matter had been discussed by the board. Now, it so happened that he had been at every meeting, and, therefore, he might venture to say that it had never been discussed at the board, and he supposed the statement of its having been discussed was one of those rumours of which that gentleman spoke in the early part of his speech. All the discussion which had taken place had been in the presence of shareholders and by shareholders. At the last meeting he said the time would, in all probability, come when they would have to go into the subject or think about it, but as a matter of fact the time had not yet arrived. It was said on the part of the Bolivar Company that when Mr. Darlington had gone out and examined the property they would then have a reasonable and proper idea of the value of the property, and would really know what was its extent and capacity, and what this company really ought to do with it. He went into the question at all. The directors had never entered upon the question of terms, or of the arrangement of the time at which such amalgamation should take place. No doubt a time would come when it would be desirable that these two companies should no longer remain unconnected or distinct. The railway was made for the purpose of bringing the ore to the coast for shipment, and the time would come when the railway ought to belong to the New Quebrada Company, and whereas that time came the shareholders might depend upon it that the directors would do nothing until they had thoroughly considered the matter with the shareholders, and heard all they could say or suggest upon it. (Hear, hear.) He had been asked as to the prospect of a dividend. The first time he took the chair at these meetings he was wonderfully prophetic—in fact he was almost dogmatically prophetic. (A laugh.) Next time he spoke with a little less dogmatism, and the third time he said he was not a prophet. Since then he had arrived at the conclusion that prophesying was a dangerous business.

A SHAREHOLDER: Except after the event. (A laugh.) No doubt that was the safest time to prophesy. He dared not say when he thought they would have a dividend. He thought they would be in full work in three months from the present date—they would bring down ore by that time. There was a good deal to be paid off before dividends arrived, but he thought he had better stop there. It would be for the shareholders to say when the profits arrived how those profits should be disposed of. (Hear, hear.) Colonel MULLOCK asked how it came to pass that they had not had ore of a richer quality sent down than those which came by the ship. Jane Francis, and Colonel MULLOCK seemed to think that the directors had made a great mistake, and even doubted whether the company's representatives at the mine had not disobeyed the orders given. Now, he should at once relieve those representatives from any suspicion by stating that they had not disobeyed instructions; but, on the contrary, had exactly followed the instructions which had been given them. Now, what were those instructions? It seemed to be suggested that the directors ought to have given instructions for the best ore to be sent down. Now, the board considered the matter, but not as a matter of mere pounds, shillings, and pence. They enquired what was fair to the pro-

Wors. Would it have been fair that they should have instructed the engineer to take out all the best ore—the peacock ore—send it down that it might have come out into the market that a cargo of ore had arrived of over 30 or 40 per cent. copper? Surely that would have been an unjust proceeding. (Hear, hear.) Mr. Darlington stated that the ore would have been sent down fair, and he believed it would have encouraged rash speculation, and would have been very improper. (Cheers.) Therefore, the directors had not done so. The directors instructed the engineer to do as he thought fit, and he sent down the ore as he came to them, and if he had met them to-day, he would have reported that the best ore only had been sent down. (Cheers.) As he had said, with a great deal of mistrust—probably better rather than worse. If specimens of ore had come forward—probably better rather than worse. If specimens of ore had come forward, he would advise the shareholders not to indulge in very much speculation, but to the quality of the ore. The directors had no reason to suppose that the ore was bad or poor, or would not pay for exportation, but he thought that the shareholders not to be led away with the notion of 30 or 40 per cent. copper. Mr. Darlington stated they had no reason to expect that the ore would yield a fair and good price. There was no reason to doubt that they were going to dig into the ground, and to see what they could get out of it. A question had been asked relative to sending a regular supply of ore before the completion of the railway. That, of course, was a matter of calculation—a matter of pounds, shillings, and pence. It was simply a matter of calculation by the ship Jane Francis had practically left no profit, owing to the cost of the donkeys, and the other expenses connected with getting the ore down. Those 300 tons of ore cost the company £4, 2s. 6d. per ton for transport. It was right to send that cargo forward, because the board had promised to do it, and he thought that in the future it would be better to save that £4, 2s. 6d. per ton, and wait until the railway was opened, which would be in about three months. At the present time to send the ore even to La Hacha would cost 3s. per ton. He doubted the propriety of sending down ore at such a cost. His personal opinion was that it should not be done at all, and certainly the board was not to be convinced that it should not be done to any great extent. (Hear, hear.) The directors had been informed that the donkeys employed in the transport of ore had injured the railway, and the contractors had made a considerable claim on that account. As a matter of fact, it was not a matter of importance whether they brought the ore down or collected it for shipment. The railway was opened. With regard to the question of debentures, he would refer to the colleague, Mr. Thompson (who was thoroughly acquainted with the financial affairs of the company), to answer that. He was happy to say that all the financial difficulties had disappeared. In answer to a further question he might say that the Titara Mine was the property of this company, but Mr. Forbes advised that the Col. Mulock that that mine should be worked should be the suggestion of the board. As regarded the condition of the line which still remained to be made, from what was told the directors of the Bolivar Railway Company he believed the bridge works and rock blasting were almost completed; there were no great engineering difficulties, and probably by the end of March it would be completed.

Mr. JAMES THOMPSON, in reply to the question regarding the debentures, said that of the first 30,000, £15,000 had been taken by the shareholders, and the remainder by Messrs. Mathison, who had chosen to keep that amount on account, they having all of the debentures, and the second 20,000, was on the same footing. With regard to the last amount, he might mention that 12,000, or 13,000, had been taken by the shareholders.

The CHAIRMAN, in answer to a further question, said that the stock of ore on hand at the mine was 4100 tons, and at the various depots 1100 tons, making 5200 tons. That had been slightly reduced by the cargo which had come over here. Probably about 300 tons. As to the land adjoining the railway, there was no doubt it would increase in value, and the directors had given orders that it should not be let for less than a cheap rate. The report was then adopted.

The CHAIRMAN moved the re-election of Mr. William T. S. Oakes. He said that the gentleman was at present temporarily absent on a long journey. When he left he tendered his resignation; but as he was only going to be absent a short time, and as Mr. Oakes was a most valuable and efficient director, the board had refused to accept his resignation, and in adopting that course he was sure they had acted in accordance with the wishes of the shareholders. (Cheers.)

Mr. WARD seconded the resolution, which was put and carried. The CHAIRMAN moved the re-election of Mr. James Thompson. He spoke in high terms of the great services which Mr. Thompson rendered to the company, especially in connection with matters of detail. It would be impossible for the company to be served by a better man. The resolution was put and carried.

Mr. THOMPSON acknowledged the re-election of himself and colleague.

On the motion of Mr. WILLIAMS, seconded by Mr. STEER, Mr. G. T. Rait was re-elected auditor.

Colonel MULOCK and one or two shareholders expressed an opinion that Prof. Vincent should be elected a director.

The CHAIRMAN said that at the present meeting this could not be done, as the proper formalities had not been complied with, but he need scarcely say that the directors would be happy to welcome as a colleague any gentleman whom the shareholders might select as a director.

On the motion of Mr. LEWIS a cordial vote of thanks was passed to the Chairman and directors, and the Chairman having acknowledged the complement, the meeting broke up.

HORNACHOS SILVER-LEAD MINING COMPANY.

The general meeting of shareholders was held at the Safe Deposit Company's Buildings, on Wednesday.

The Hon. A. G. J. PONSOMBY in the chair.

Mr. W. BATTYE (the secretary) read the notice convening the meeting, and the report of Señor Don Rafael Homedes, the resident managing engineer, was taken as read:—

He had intended at the end of the year to write a report covering the time which had elapsed from July 1, 1875, on which date he made his last report to Dec. 31, 1876, upon the work done in the mines, and describing all the new buildings and machinery. He is, however, still in want of certain details and particulars in connection with the several pieces of machinery and stores which have been purchased. Some of the works at Afortunada are still not completed, though a very important part of them are so already, as well as the fitting up of the machinery at Descuidada. At the beginning of January they commenced to work with mineral, and in a few days all the apparatus was duly adjusted, the dressing machinery working regularly. All the apparatus belonging to this department is exactly suitable to the mineral, and in its selection, as well as in the manner in which it has been placed, they have avoided all the inconveniences which so frequently occur in plant of this nature. He regrets to say that the level of the mine has not been penetrated a few feet more than the level of the level, and as to the sinking of the shaft P 2 must be continued in order to be down if possible at the end of the year 1877, or at least in the first four months of 1878 to the sixth level, that is 120 metres. Carrying out these works, and admitting that during the present year the steps in levels 2 and 3 are carried, we shall have prepared for the forthcoming year of 1878 levels Nos. 4 and 5, and the sixth level also will be well on its preparation. This programme, which is easy to carry out and will continue in future, will place the mine in a position to give henceforth, and with regularity the good returns it is capable of. During the present year will be finished the stopping of the second level, which has been scarcely commenced, and that of the third level will be continued with the necessary vigour to feed the dressing machinery with sufficient and constant work as far as it may be possible.

In conclusion, he states that in although up to this time he cannot by the result of actual working confirm his appreciation of the richness of the mineral, from the results in the progress of the works and in the several stops, and by the results in the dressing machinery, he is more confirmed than ever in his first opinion, and believes he can assure the company that the result of the works this year will be quite up to his estimate, and he hopes will exceed it.

The CHAIRMAN said it was his office to propose that the report of the directors be received, and the accounts, as audited, be adopted, and in doing so he might explain that the general meeting should have been held in the autumn, but they had little to report, and were constantly expecting shipments of ore; but, being compelled to hold the meeting within the year, they called it for the end of December, and adjourned it until that day. The company authorised them in July last to raise 10,000, by debentures, to enable them to erect machinery on the Descuidada and Afortunada Mines, and on the decision of the general manager they ordered machinery and forwarded it to Spain. Much had already been put up, and some was at Afortunada not yet erected; but the difficulty of getting ore to market had arisen from the resident engineer wishing to erect all the dressing and other machinery on one plan. In April they received notice of an accident to the old machinery; and, as it was under the circumstances considered desirable to erect the new machinery on the old site, it had stopped the shipment of ore to the value of 5000, to 7000, per month. That was the reason they did not call the meeting before, and it was now the wish of the shareholders that the company's indebtedness should be paid off, but this was a matter which would have to be discussed presently. Mr. Homedes had been ill from fever, caused by the great heat that had occurred in that part of Spain, and the same disease had also affected both the fitters and the miners. Since that they had had floods and storms, which had been very severe; and, although he was glad to say that their own machinery and buildings had stood the test of it, the railways of the district and the bridges had been so damaged that shipments had been altogether stopped. Their accounts had been made up to June 30, so as to meet the wishes of the auditor, and so that in future they might meet in September and March. In the second report they gave an estimate of receipts and expendi-

ture, and all would feel that nothing was left to them but to issue new capital. He did not wish to detain them, but might say that they had that day received advices of a satisfactory character from Mr. Homedes. They would see in his report that he had been under his estimates in some cases, and slightly over in others; and there was one great advantage in his reports, that he only wrote what he believed to be true. He wished he had reported somewhat more fully than he had done, and that he had told them that ore was on its way; but it would be gratifying to the meeting to hear that they had received a telegram that morning from Mr. Homedes, stating that he had 30 tons of ore prepared for market, and that he could do 1½ ton daily. He telegraphed—"Send piston ordered, and 1½ ton per day will be increased to 3 tons," which would give them a fair quantity monthly. He concluded by formally moving the reception and adoption of the report and accounts.—Mr. FLEWELL seconded the motion.

Mr. PARISOT said that although he addressed them from the shareholders' side of the table, he was responsible for all that had been done by the board, but would like to explain why he felt compelled to resign his seat as a director. He found that some dissatisfaction existed, and from communications which he had had with large shareholders he felt that the shareholders generally had not the same confidence in the board as formerly, and he therefore resigned his seat. For this reason he should also vote against the re-election of the directors who retired by rotation.

The CHAIRMAN suggested that this point had better be raised on the question of re-election; he therefore put the resolution for the reception and adoption of the report and accounts to the meeting, and it was carried unanimously.

Mr. FLEWELL proposed the re-election of the Hon. A. G. J. PONSOMBY, describing him as a thorough man of business, and anything but an ornamental director. There were few who knew more of the theory of mining, and he had the recommendation of being very precise in the mode in which the minutes were taken. He could not sit down without referring to the circular of Mr. Parisot, which he considered unjustifiable, and opposed to the answer which Mr. Parisot had given to a question put to him by himself. Mr. Parisot said that he did not oppose the directors, but having sold shares at a premium (and he readily admitted that Mr. Parisot had placed the money received at the disposal of the company) he could not continue to sit at the board, and he asked the shareholders for further support. Now, the board had no intention three months ago of asking for more capital, for they were told that when the machinery was in order they would be receiving 300 £ worth of ore per month. The directors were, therefore, surprised to find that Mr. Parisot should now say that the reconstruction of the board was necessary. There had been no complaint of the board, though some shareholders might have expressed dissatisfaction that promises made had not been realised; he therefore appealed to the meeting, and to those named in Mr. Parisot's circular for appointment to the board, not to do a dishonourable act by refusing to re-elect Mr. PONSOMBY, more especially as they well knew that for a year and a-half the directors had acted without pay, and the property appeared to be now on the eve of becoming remunerative.—Mr. MARTIN seconded the motion.

Mr. PARISOT was quite ready to admit that it was not through any fault on the part of the Chairman that the present position had come about, but the confidence in him and in the board generally was by some means lost; and he might here say, in proof of his assertion, that although the directors sent out proxies two days before him, the directors did not hold proxies for more than one-tenth of the shares whilst he held proxies representing more than half of the capital. It was proposed in September, 1875, to issue debentures, and the result was that very few debentures were applied for, as the shareholders had not the necessary confidence in the management of the company. The directors were taken up. He applied for the other half himself, and had to ask time for payment. This had caused some of the delay. At the present moment there would be a proposition to increase the capital, and he believed that with the present board the amount would not be eagerly taken up. This was why he proposed a new board; he wanted everyone to have confidence in the board, for they had great and certain prospects in the property before them, and it was to the interest of all that each should take his proportion. For himself he was quite prepared that the amount of his debt should be paid off in shares if any of the shareholders should be unwilling to take the *pro rata* proportion to which they would be entitled. They would now understand why he moved that in place of the Hon. A. G. J. PONSOMBY, W. Dunlop Anderson be appointed a director.—The motion was seconded.

Mr. PATTERSON (the company's solicitor) explained that the amendment could not be put, as the 95th clause of the company's Articles stated that a shareholder not being a retiring director could not, unless recommended by the directors, be elected without 10 days notice being given.

Mr. HALL seconded the resolution, and he did not believe, moreover, that the Chairman would care to remain in office by falling back on a technical point in the Articles of Association.

Mr. PATTERSON feared the Chairman had no discretion in the matter.

Mr. PARISOT said that only eight days notice having been given of the meeting, it was impossible to give the 10 days' notice required, and he would think that under these circumstances the objection which the directors had the power to raise should not be persisted in.

Mr. PATTERSON said that only seven days notice of the meeting was required by the Articles.

The CHAIRMAN said that when the meeting was held in December it was known that the present meeting would be held, and no one at the board had any idea until Friday last that the gentlemen now proposed would be brought forward. And he did think that the Articles of Association had done rightly in saying that 10 days notice is necessary. New blood was always opposed by Mr. Parisot until now, and in 1874 he wrote a letter to the board on the subject, but Mr. Parisot declared that it was then too soon to consider the matter. He might state, too, that as directors they had had no fees, and had had to advance money. As to Mr. Parisot's resignation, he made the minute on Jan. 23 that "Mr. Parisot expresses his wish to resign, but at the request of the board will reconsider the matter, and express his opinion at the next meeting."

Mr. PARISOT understood that the resignation was merely deferred for him to give it in writing. He was away in Spain when the December meeting was held, and he did not know what was too late that notice for the election of new directors could be given for this meeting, which was supposed to be merely an adjournment of the one held in December.

Mr. BARTHOLOMEW suggested that probably Mr. Parisot's views could be met by a compromise. Could not the old directors be re-elected and two of the new ones added to the board? He had no doubt Mr. Parisot thought it to the advantage of them all to take the steps he had taken, but this would be an amicable settlement.

Mr. KILBY, as one of the parties proposed for election, could only accept the position on the terms proposed, that the whole four should be elected.

Mr. HALL seconded the resolution, and he would like to see Mr. Taylor, as they were now face to face before the shareholders, an explanation of the insinuations he had made against him in his circular. Mr. Taylor had stated that the true history of the transactions which led the company into its present position was not before the shareholders, which was a direct insult to himself and to the gentlemen named for election as directors, who were not his nominees, but the nominees of a large majority of shareholders; and he also declared that Mr. Taylor was not justified in giving extracts from letters without quoting the whole. Mr. PARISOT said that he had no objection to Mr. Taylor's having done so. He (Mr. Parisot) declined to submit his honour to the decision of Mr. Taylor after his unwarrantable proceedings, but was quite willing to take the opinion of the gentlemen present on that point. Another garbled statement was from a letter written by one of the gentlemen proposed for election. The letter states that the writer knows nothing of the directors, either for or against them, whilst Mr. Taylor quotes it "he has no knowledge of the business of the company." He (Mr. Parisot) was the vendor of the mines, but all vendors were not black sheep. He had also the right to enquire what were the motives which prompted Mr. Taylor to issue the circular in question, and he ventured to assure the meeting that had Mr. Taylor been one of the four gentlemen proposed for the board that circular would never have been issued. Again, Mr. Taylor states—"Mr. Parisot had sedulously induced the board to allow him to advance money, and by the laws of Spain he could register a mortgage, and so secure the whole property." This was not correct. He denied that he could register a mortgage in Spain, and it was also a mistake to say that the company owed him 8000 £—the amount they owed him was over 11,500 £, and this had been disbursed on behalf of the company to meet the various liabilities as they fell due. Now, he thought Mr. Taylor should have investigated the matter before he attacked him, and he called on Mr. Taylor to substantiate the statements or to apologise for having made them.

Mr. TAYLOR had hoped that the proceedings were about to merge into a phase which would open a satisfactory solution of their difficulties. He was charged with saying that Mr. Parisot had acted in a way which no honourable man would have done, and he thought that that had been proved by the explanations given to-day. He was also charged with suppressing and garbling letters, but he did not acknowledge that he had intentionally misrepresented either Mr. Parisot or Mr. Barker. He wished to promote a compromise. At the last annual meeting it was proposed that different local shareholders should be represented, and they obtained a promise that they should appoint some gentleman to represent them. If that had been done Mr. Parisot would not have been in the position he now was. If they could take two gentlemen from Mr. Parisot's list, and nominate two to represent Yorkshire and Lancashire, everyone would be satisfied.

Mr. PARISOT begged to remind Mr. Taylor that he had not replied to his question. A SHAREHOLDER said that the opinion prevailed that they were entirely in the power of Mr. Parisot, whilst Mr. Parisot said he was in the hands of the company. He would like to know which was the correct view.

The CHAIRMAN said that as long as they owed Mr. Parisot the money they were, of course, in his power. He had no direct claim on the company, but Mr. Paig had, and he believed Mr. Paig owed the amount to Mr. Parisot, but he hoped there was no chance of Mr. Parisot acting adversely to the company.

A SHAREHOLDER would like to know, as a holder of debentures, whether Mr. Parisot had any prior claim over the debenture-holders?—Mr. PARISOT said he had no prior claim as a debenture-holder, but there were certain portions of his claim which undoubtedly had priority.

The CHAIRMAN said that the company's acceptances held by Mr. Parisot were not yet at maturity, and as to these, Mr. Parisot had given them an undertaking that he would renew the bills for another period of 12 months.

Mr. PARISOT repeated his demand that Mr. Taylor should give full explanation, or at once and decidedly withdraw the circular.

Mr. TAYLOR was sorry he had hurt Mr. Parisot's feelings. He did not say that Mr. Parisot was a liar, but he thought that they were entirely in the hands of Mr. Parisot, and he expressed his regret to Mr. Parisot for having done so.

Mr. PARISOT accepted Mr. Taylor's explanation.

Mr. HALL thought they might now turn to business. As the removal of the present directors and appointment of a new board could be effected in a few weeks it would probably save time if the directors gave way at once, as the other party would not consent to even three of the four candidates being appointed, and the question would really be what the present directors should do for them. The company authorised them to raise 10,000 £, and they could only raise 5000 £, so that they had not much influence, and he feared that if they did not alter the constitution of the board they would not get the 20,000 £, taken up *pro rata* by the shareholders.

Mr. MARTIN said that as to what he had done as a director he might state that when this company was first formed he placed 2000 of the shares among his friends, in 1874 he also got them to take 250 more shares, and he also placed 85 of

the debentures. It was, moreover, his friends who enabled him to hand the company a cheque for 30 £, when the company was in difficulties.

The CHAIRMAN wished it to be distinctly understood that the board did not object to the amendment, but that it could not be put under their Articles. As to the failure to place the debentures it did not surprise him, because gentlemen who go into mining do not go for 10 per cent., but for very much more or nothing. He believed shares were worth more than debentures.

Mr. TAYLOR suggested that the four gentlemen proposed for election should select three of their number to be appointed, so that the matter could be settled amicably.

It appeared that only three of the proposed directors were present, so that the arrangement of all or none could not be varied. Several shareholders expressed full confidence in the present board, and were willing to make the required appointment to the three vacancies provided the present directors were retained.

Upon the re-election of the two retiring directors being put to the meeting the show of hands was declared by the Chairman to be in favour of the re-election, whereupon Mr. Parisot demanded a poll, and the requisition having been made in due form and in writing, the Chairman ordered the ballot to take place on Monday, Feb. 5, between the hours of 11 and 2. Mr. Martin was selected as scrutineer for the directors, and Mr. James Goldard for the opposing shareholders, and the meeting was declared adjourned until Monday at 2 o'clock.

An extraordinary general meeting was held immediately after the above. The Hon. A. G. J. PONSOMBY in the chair.

The CHAIRMAN explained that the object of this meeting was to authorise the creation of an additional 2000 shares of 10 £ each. They had heard the necessity of issuing this capital. They owed certain sums of money, and although Mr. Parisot had offered to take the amount of his debt in shares at par they could not, even if they decided to do so, accept his offer without new shares being created. It had been proposed to issue the shares at a premium, but he thought it fair that they should be issued *pro rata* to the shareholders at par. Those who had been connected with the company from the beginning would thus obtain an advantage, and those who had purchased at a premium would reduce the average premium by taking the new issue at par. He thought that the shares should be issued *pro rata* to the shareholders at par in the first instance, and that if any remained unapplied for they should be at liberty to sell them at a premium, or apply them to pay off Mr. Parisot. He concluded by formally moving that the capital of the company be increased from 60,000 £ to 80,000 £, by the issuing of 2000 shares of 10 £ each to be offered *pro rata* to the shareholders in the first instance, calls to be at the discretion of the directors.

At the suggestion of a SHAREHOLDER a provision was inserted in the resolution authorising shareholders to apply for more than their *pro rata* number, so that in the event of any shareholder failing to apply the remaining shares might be distributed *pro rata* to the shareholders who had applied for them.

A SHAREHOLDER enquired whether the Chairman and Mr. Parisot had the same confidence in the property as ever.

The CHAIRMAN said that they had; they had no reason to doubt the success, and believed that they were on the eve of it; indeed, that was the chief reason for his desiring to be re-elected a director.

The resolution as amended was unanimously agreed to, and the cordial thanks of the meeting having been voted to the Chairman, the proceedings terminated.

PORT PHILLIP AND COLONIAL GOLD MINING COMPANY.

The ordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street.

Mr. A. T. THOMSON (deputy-Chairman) presiding.

Mr. JOHN PURCHASE (the secretary) read the notice convening the meeting, and the minutes of the previous meeting, which were confirmed. The report and accounts were taken as read.

The CHAIRMAN said he appeared before the shareholders in the place of Mr. Moor, who was prevented by illness from attending the meeting. He had received a letter from Mr. Moor expressing his regret at being unable to be present at the meeting. Mr. Moor's services had been so thoroughly appreciated that he was sure the shareholders would join with him in the hope that his absence would be only temporary. Since the last meeting the company had sustained a great loss by the death of Mr. Westby, one of the oldest shareholders and directors in the company. Mr. Westby had great experience and an upright character, and his loss had been a great loss to his colleagues. The report was so full that it would not be necessary for him to make any lengthy remarks. Since the report was drawn up a telegram had been received giving the yield for the month ending the 31 of January at 7 dwts. 4 grs.; western reef, 4 dwts. 15 grs. per ton; profit, 1400 £, and remittance 8000 £. If the motion for a dividend which he would propose should be carried there would remain a balance of 1450 £ in hand, which in comparison with the accounts for the past two or three years, was a very favourable result. There was nothing in the report to which he need particularly refer, except to remark that since the previous meeting the average cost of the firewood had been 24s. 8d. per cord, as compared with 30s. in the previous year. Since the report was issued information from Mr. Bland of a still further reduction had been received. Owing to the railway firewood was now being purchased at 21s. 6d. and 22s. 4d. per cord, as compared with the figures he had quoted in the previous years. The shareholders might be interested to hear the result of what is called the tributing department. For some years past they had had small numbers of tributers working at the mine, but it was only during last year that the tributing had assumed such large proportions as to affect the balance-sheet. As they had been working at a loss for some time Mr. Bland found it necessary to curtail operations, only doing what work was absolutely necessary to get a profit. But as this threw many men out of work, and there were many men idling about the neighbourhood, Mr. Bland thought it desirable to have the mine explored in the parts which had been partially worked in the earlier days of the company's operations. At that time the cost of raising and hauling the quartz was very considerable, the reduction cost alone being 1 £ per ton, against 4s. 10d. at the present time. A good deal of quartz was, therefore, left to the mine, which was now put to work, as the charges are so much less. 35 tributing parties were set to work with very good results, and the mine was now being developed at both the north and south shafts, hitherto work only having been done at the north shaft. The company makes a charge for crushing the quartz raised by the tributers, and they (the tributers) pay the royalty to the proprietors, and a sliding scale royalty varying from 15 per cent. to 30 per cent. to the company. But the company had been doing the deadwork, and the only fear that the board had was that the tributers would take only the good quartz, leaving the company a great deal of deadwork to do. However, in his last letter Mr. Bland had anticipated the views of the directors on the subject, and he had induced the tributers to do part of the deadwork themselves, thus removing the only objection the directors had to the system. Of course this was only an experiment, as the tributers have to pay so much that it would only pay them should the quartz raised be of good quality. Should the experiment succeed the value of the mine would be considerably increased, for it would be noticed that a great deal of the net profit shown in the accounts had been derived from the tributing. After inviting comment and enquiry upon the report and accounts the Chairman moved their reception and adoption.

Mr. ALFRED CORBETT seconded the motion.

Mr. BUDD wished to know whether it was necessary that the company should have such an expensive London board of directors and all the appliances. The actual profit made at Clunes was about 2000 £, and the London expenses amounted to 1000 £. They had a most able manager out at the mine, and doubtless whatever could be done was done in a first-rate manner by Mr. Bland. The report, though better than its predecessor, was not, he thought, very encouraging with regard to the mine, though a balance sheet was presented, and he was pleased to see the accounts?—The CHAIRMAN in reply said by the deed the fees of the directors were placed at 800 £ per annum. At the meeting last year some sensible and judicious observations having been made with regard to the fees and the number of the directors, the board themselves passed a motion reducing their fees from 800 £ to 500 £, which latter sum they took last year. The 800 £ was all the fees the board had taken for three years. It was also resolved that the next two vacancies at the board should not be filled up, so there were now only seven directors, Mr. Westby having died during the year.

Mr. SAUNDERSON asked whether any of the operations, which it was estimated would cost about 445 £, had been commenced?—The CHAIRMAN replied in the affirmative, adding that part of the royalty had been paid.

Mr. SAUNDERSON said he found that Mr. Bland had been paid 128 £, 6s. 8d., and that there was a further 600 £ due to him. That seemed to be a large amount for such a short time.

The CHAIRMAN said the first amount was for two years and over salary. After a short discussion of this subject the report and accounts were unanimously adopted.

The CHAIRMAN then proposed a dividend of 1s. per share, payable free of income tax on March 1.

Mr. SAUNDERSON seconded the motion, which was carried.

Messrs. E. W. Wingrove and S. Herpath, the retiring directors, and Messrs. H. Ransford, and G. Molineux, the auditors, were re-elected.

The CHAIRMAN then proposed a cordial vote of thanks to Mr. Bland, the company's manager at Clunes, for his able management of the affairs of the company during the past year.

Mr. DOWMAN seconded the motion, which was adopted.

A vote of thanks to the Chairman and directors terminated the proceedings.

VICTORIA (LONDON) MINING COMPANY.

The ordinary general meeting of shareholders was held on Thursday at the City Terminus Hotel, Cannon-street.

Mr. A. J. THOMSON (deputy-chairman) presided in the absence, through illness, of Mr. Henry Moore the Chairman of the company.

Mr. J. W. PURCHASE (the secretary) read the notice convening the meeting, and the minutes of the previous meeting, which were confirmed. The report and accounts were taken as read.

The CHAIRMAN said there was very little to add to the information contained in the report and accounts which had been distributed amongst the shareholders. Since the report was drawn up, however, a letter had been received from Mr. Bland, enclosing an extract from a local paper of November 18. The extract stated that the operations on the London and Melbourne Company's property, leased to the United Kingdom Extended Company, had been resumed. Mr. Bland had stated a month previously that he was in hopes that operations would soon be resumed by the United Kingdom Extended Company, but added that there were financial and other difficulties which would first have to be surmounted. However, they were now in a position to resume the operations, and he had collected during the period that the mine had been neglected. The South Clunes Company's operations were in all respects very similar to those of the preceding year, the returns having been within 1 dw. per ton of those of the previous year. The prospects of the company

...said that he had great confidence in the future success of the com

The statement of accounts, and report of the agents were then submitted :—

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Mr. Ross asked how it was that the shareholders had been favoured with Mr. Bowman's report?

The SECRETARY read the notice convening the meeting, and the balance-sheet to Dec. 30, showing cash at bank 307*l*. 15*s*. 5*d*., was

For remainder of Meetings see to-day's Journal.]

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MINING EXPLOSIVES.

At a meeting of the members of the Mining Institute of Cornwall, held on Saturday, at Camborne, Mr. Cunnack, of Helston, read a paper on "Mining Explosives." Dr. LE NAVE FOSTER, President of the Institute, was in the chair, and there was a good attendance of members.

Mr. CUNNACK, in his paper, stated that for about 4000 years, down to about the commencement of the 17th century, it was the ordinary practice to kindle immense fires in the more refractory rocks, and thus calcine and bring them into a condition to be operated upon with the pick and gad. Clumsy as such a process might appear, Baron Beust had declared that it was less expensive and as efficacious as the use of gunpowder, and taking into account all the accessories of the latter, and substituting coke for wood, he had proposed to return to the practice in re-opening certain mines that had been abandoned on account of their poverty. It was evident, however, that as the working of a mine became extended much below the means of natural drainage, the calcination of rocks in this way would be impracticable; and in this, as in similar cases in other directions, it was probable that the pinch of a sharp necessity first led to the application of gunpowder for rock blasting in the year 1613. For about 200 years it appears that gunpowder had been the main resource of the miner in the prosecution of his work, and the locality of its introduction into mining operations in Cornwall seemed also to have been the first of its more extended application to breaking hard and wet ground. The demand for a more powerful and convenient explosive than gunpowder had led to many experiments. It was thought that chlorate of potash might be serviceable in this direction, but the risk attending its use was found to be too great. Subsequently the cyanogen compounds were tried, but, after blowing off the fingers of the inventor, these were also discarded, and gunpowder maintained its place. They had now various other explosives, but at this stage the test of experience must decide upon the comparative advantages of the explosives, but it was to be observed that with the production of advanced means of economising labour, there was an advanced skill called for in those who applied them. Without this education, which was dependent upon the individual energy of the users, it was impossible that the full benefit of any invention, however excellent, could be obtained, and in the application of such means as those he had endeavoured to treat of the very forces that, skilfully directed, were calculated to benefit and enrich the labourer might, by his carelessness or incompetence, be transformed into the agents of the most appalling disaster.

The CHAIRMAN remarked that Mr. Cunnack, in his interesting paper, had spoken of the old plan of burning rock and cracking it in that way, as a thing that had gone out of date altogether, but perhaps he was not aware that it was still in use in Norway, where he had himself seen it carried out in driving levels. In the Hartz also driving levels and stoping ground by these means were found to be more economical than the use of gunpowder or other explosives. At the same time such a process could only be adopted where wood was available, although it had been proposed to use coke for the same purpose. Then again, Mr. Cunnack had spoken of the safety fuse as being universally adopted, but it could scarcely be said that that was so, because—and he had no doubt many present would be surprised to hear it—there were places in Cornwall where the needle and rush were even now used for blasting. He was not aware of the fact until last summer, when it came to his knowledge that it was done at Trevaunance Mine, St. Agnes, where the miners contended that it was cheaper and safer than safety-fuse. (Laughter.) In Norway the same thing was done; in the gold mines in Italy, with which he was at one time connected, they had nothing but the needle, and in all his experience there they never had a single accident in blasting. Of course, he had not a single word to say against the safety-fuse; on the contrary, he believed it was a splendid institution, and had been the means of preventing many accidents, but nevertheless it must not be supposed that it had entirely superseded those old methods.

With regard to the safety of the different explosives now in use, he was reminded that when the son of Nobel, the manufacturer of nitroglycerine, was blown up by it in Stockholm, and nothing was found of him but a pair of boots, Nobel declared the very next morning that nitroglycerine was the safest explosive in the world. Practical miners were well aware that nearly all blasting accidents happened during the operation of tamping, but the various new explosives now in use could, as a rule, be used without any tamping at all, and he thought, therefore, it was a great pity that tamping should be so often employed. It was never intended, for instance, by the vendors of dynamite, that that explosive and powder should be used together; a proper cap was provided for exploding dynamite, but at the same time there was nothing to prohibit the practice of using them together, and then tamping was employed, and if they once introduced the process of tamping they, of course, introduced its dangers.

Mr. W. H. RULE said he understood that Capt. Josiah Thomas had tried both dynamite and tonite in Dolcoath, and the result was that in the end where the boring-machine had been at work dynamite had beaten tonite. He believed himself that dynamite was the best explosive, and that if properly used it was cheaper to the miner than any other. One objection to tonite was that they could not put so much of it into a hole as they could dynamite. The dynamite cartridges were smaller, and, therefore, the men were not obliged to bore so large a hole.

Capt. HARRIS, of Wheal Vor, did not see that there was much in Mr. Rule's objection with regard to tonite, because they could have a cartridge of any size. His experience was that so far as strength and effectiveness went there was little or no difference between dynamite and tonite, but in his opinion tonite was very much safer for handling, and also very much better for the miners in close places. He had had the direction of working for some time past where they could not have done much either with dynamite or powder, the places were so close, and but for tonite he scarcely knew how they would have got on at all. With tonite they could resume working directly after blasting, without any injury to the men who used it, because there were no fumes after the explosion.

Mr. RULE believed that where the men had their own choice of explosives they used 2 cwt. of dynamite to 1 cwt. of tonite.

Mr. CUNNACK mentioned that at three different mines—Dolcoath, East Pool, and West Basset, a fair trial of dynamite and tonite had been promised and arranged for, but on each occasion the representative of the Dynamite Company had backed out. He was anxious, for the sake of the miners themselves, that a trial should take place, because it was of great importance to them that the best explosive should be placed in their hands.

Mr. RULE was afraid that unless the price both of dynamite and tonite was brought down they would have to revert to the use of gunpowder, of which they could get 6 tons for 1 ton of either of the other explosives. The great cost of dynamite and tonite stood in the way of their being generally used.

Capt. S. WILLIAMS, as one who had been connected with explosives for some years, admitted that dynamite possessed great power, and that there was less smoke with it than with most explosives, but its great fault was that it was uncertain in its effects. A man who had been engaged in trying the various explosives told him on the previous Saturday that if he used tonite he could not earn more than 10s. a month; that with dynamite he could only earn 30s. a month; and that he would not work with any more of the new explosives. Capt. Thomas, however, had promised the speaker a trial of litho-fracture, and he (Capt. Williams) would guarantee any man using it 1l. a week. Having criticised Mr. Rule's remarks as to getting more dynamite into a hole than tonite, and yet saying they would have to go back to powder, of which they required six times as much to do a given piece of work as tonite, he went on to speak of the popularity of litho-fracture in places where they were using 30 lbs. of that explosive to 3 lbs. of tonite.

Capt. TEAGUE, jun., said he had no doubt the remarks of the last speaker were worthy of notice, but if he wished to introduce his explosive (litho-fracture) into their mines, he must not expect to dictate to them as to how they should work their mines. He feared that there had been a little prejudice mixed up with the remarks

they had heard, as some of the speakers were interested in one explosive and others in another. His experience of powder was that it had proved to be very efficient in many cases, but what applied to the working of one place did not apply to the working of another; indeed, in many instances, powder was preferable to any of the new explosives, from the fact of its not being so quick in its motion. Having remarked that it was advisable to leave the choice of explosives to the miner himself, he said the danger arising from the fumes was nothing like so serious as it used to be, because the mines were now better ventilated, so that this was a matter of comparative indifference, but what they wanted was a powerful explosive, and if dynamite or any other new explosive was to supersede powder the manufacturers must supply it cheaper.

Mr. WILKINSON, having read numerous extracts from newspapers, &c., said that the term "safety," as applied to explosives, was misleading, for it was contrary to the nature of an explosive to be safe.

Capt. RODDA, of Carn Brea, said some cheaper or better explosive than either dynamite or tonite must be yet introduced before the powder factories at Ponsanooth were "killed." (Laughter.) He had had no experience of tonite, but had told been that it was not so strong as dynamite.

Capt. NICHOLAS said he had used the rush, powder, dynamite, and tonite, and if he were called upon to say which was the best explosive he should certainly say tonite. (Applause.)

Capt. PASCOE gave his preference to powder before any other explosive.

Mr. RULE held that if powder was cheaper than the other explosives they had yet another thing to consider. A great deal depended upon the time they took about the work, and if the new explosives were found to tend to greater expedition in their work then they were cheaper.

One or two other gentlemen having offered a few remarks, Mr. CUNNACK replied, and Mr. SMITH, in proposing a vote of thanks to the gentleman, said greater care should be taken of detonators, which were very dangerous if left about and carried in the pocket, as was often the case. They were very small things and easily portable, and it seemed that for this reason less caution than was necessary was exercised.

Mr. WILKINSON seconded the resolution, which was carried.

The PRESIDENT, in summing up the discussion, touched upon a remark made by Capt. Teague, in regard to the ventilation of mines, and said he wished the ventilation was in that perfect state that Capt. Teague seemed to think it was. (Hear, hear.)

A vote of thanks having been accorded the President, the meeting separated.—*Western Daily Mercury.*

MINING AS AN INVESTMENT.

The remunerative character of mining enterprise during the past year as compared with other branches of industry may readily be estimated from the elaborate table of Dividend Mines for 1876, specially prepared for the *Mining Journal*, by Mr. Edward Ashmead, and published last week. He shows that 29 British mines, with a subscribed capital of 991,204l. 6s. 10s., paid in dividends during 1876, no less than 191,469l. 7s. 9d., being an average of (within 14s.) 20 per cent. per annum. During the same year the Cape Copper Company, managed by Messrs. John Taylor and Sons, upon a capital of 140,000l. paid 80,000l. in dividends, or over 57 per cent. per annum, and the St. John del Rey, managed by Mr. John Hockin, upon a capital of 253,000l. paid 113,310l. in dividends, or 45 per cent. per annum; whilst 17 other foreign mines in the hands of English capitalists, upon an aggregate capital of 2,238,236l., paid 185,487l. 17s. 2d. in dividends, being an average of 8l. 6s. per cent. per annum, a result which cannot but be regarded as highly satisfactory, when it is considered that in all the United States mines, and in several of those in other countries, a large proportion of the purchase-money paid by the shareholders was absorbed by promoters, so that whilst dividends are payable on a large amount of nominal capital only a small percentage of that capital has been applied to the development of the mines, or is represented by work done and plant erected. It is probable that if the United States mines at present in the hands of English companies were held by the shareholders at the prices received by the original vendors few of them would, with good practical management, have returned less than the St. John del Rey. It may be hoped that the days of exorbitant premiums on mine sales is passed, and that the regular payment of 40 or 50 per cent. per annum by United States mines will restore confidence in them, and secure equal benefit to British investors and to the bona fide miners of America. The labour involved in the preparation of Mr. Ashmead's table must have been very great, but he may be congratulated upon having supplied information of the utmost possible utility to capitalists and investors, more especially as his well-known accuracy as a mining accountant gives confidence in the reliability of the figures given. The 43 mines, British and foreign, which paid dividends in 1876 have an aggregate capital of 3,622,440l., and paid 670,267l. in dividends, or at the rate of 15½ per cent. per annum on the average.

FOREIGN MINING AND METALLURGY.

The fall in the price of iron in France is considered to have been carried to its extreme limits, but the Committee of French Forgemasters was not able to indicate in its last sitting any change in the general aspect of the French iron trade. Still hopes are entertained that affairs will revive, to some extent, in the spring. The reduction of the tax now levied on French railway goods traffic will be a serious relief to some of the French works. At Paris the iron trade is doing pretty well, thanks to the activity of the building trade. Prices are a good 16s. per ton lower in the Nord than at Paris. Pig has been weak in its tone in France; on the Nancy market the competition of Luxembourg pig is severely felt. The imports of pig into France decreased in 1876; the imports of iron, however, increased.

Business in copper has been very quiet upon the Paris market, and prices have experienced only slight variations. Chilean, in bars, has made 76l. 8s. per ton; ditto, ordinary descriptions, 77l. 10s. per ton; ditto, in ingots, 81l. per ton; best selected English, 82l. per ton; and pure Corocoro minerals, 80l. per ton. Upon the German copper markets business has remained generally quiet, transactions having been confined to the strict requirements of consumption. The Paris tin market has presented rather a good tone. Banca, delivered at Havre or Paris, has made 81l. 10s.; Straits and Biliton ditto, 80l.; Australian ditto, 78l.; and English, delivered at Havre or Rouen, 79l. per ton. The Rotterdam tin market has been feeble, and prices have been slowly declining. There has been very little doing in Banca; the nominal quotation has been 45½d., and some little business has been passing in Biliton at 44½d. The German tin markets have presented scarcely any change. The Paris lead market has remained without any sensible variation, and without at the same time any very large transactions; French, Belgian, and German lead have been quoted at 22l., and Spanish and English at 21l. 10s. per ton. Upon the German lead markets quotations have scarcely varied. There has been little doing in zinc at Paris, and prices have remained without change. At Marseilles rolled Vieille-Montagne zinc, in sheets, has made 30l. 8s. per ton. The German zinc markets have presented little interest.

The Belgian coal trade has presented scarcely any animation. The latter part of the winter season will not be much more favourable than the commencement of it, and unless an unlooked for impetus should be given by some means to Belgian metallurgical industry the summer season will be of much the same character as the now waning winter. Sales are becoming, if possible, more restricted than ever, and stocks are accumulating. The few orders received are almost entirely for immediate execution, as consumers do not see their way very clearly, and abstain from giving out their orders until the last moment. Prices remain low; so low, indeed, that very scanty profits can be realised.

The Belgian iron trade still exhibits a good deal of depression, and it begins now to be seen that the present greatly reduced prices

will not regain all at once the level which was attained in more prosperous times. Moreover, Belgian metallurgy has now to sustain a large amount of foreign competition. A contract has just been let for constructing four cupolas for forts on the Lower Escant, below Antwerp. The lowest tender was that of the Belgian Company for the Construction of Engines and Railway Plant, which required 21l. 16s. per ton. The tender submitted by the concern known as the Forges et Chantiers de la Méditerranée was 60 per cent. higher. M. Julien Deby has been appointed secretary of the Iron and Steel Institute, the post having been rendered vacant by the death of Mr. David Forbes. Some important maritime works are about to be carried out at Antwerp, and it may be interesting to note that the lowest tender (1,531,009l.) was delivered by MM. Couvreux and Hersent, of Paris.

No improvement is reported at present in the French coal trade as a whole. The dead season will commence this year with full warehouses and generally heavy stocks; under all the circumstances, hope as to the future appears to be dying out. The railway companies have suffered more than the canals from the present depression; the canals have kept their business together better, because as time has not pressed so much as usual, deliveries have been made to a larger extent by water; at present there are large floating stocks of coal. In the basin of the Loire the iron trade has been better sustained than in any other part of France; the collieries are moving on from day to day with only a comparatively little extraction, but still they are doing something. In the Nord quite a contrary state of things unfortunately prevails.

IRONMAKING IN THE CENTRAL PRESIDENCY.—However definite may be the course of the Indian Government in closing the Barrow Ironworks, in the Bombay Presidency, after an expenditure of 20,000l., it does not seem that it has been determined to stop experiments at Warora, in the Central Presidency. In the first case it was attempted to smelt native iron with charcoal upon the Swedish system; in the other the desire is to utilise the weak native coal in smelting the rich ironstone found in the locality. The careful deliberation which the Government of India is giving to the project at Warora, where, under Mr. Walter Ness, mining engineer formerly of Glasgow and South Staffordshire, coal mines have been developed, and are being extensively worked, was set forth in a letter from Mr. Ness to the South Staffordshire Mill and Forge Managers' Association, which has just been read at a meeting of that institution. Mr. Ness expresses his obligation to the members of the Institute and to the gentlemen from Middlesborough who took part in discussing the communications that he some time ago forwarded to this country setting forth the difficulties which surrounded the experiments in which he had been engaged in the Government's behalf. The opinions thus expressed in England had been copied by the authorities from the *Mining Journal*, and printed as appendices to other analogous matter, and submitted to Government, and were thence transferred to the Annual Progress Report of the P. W. Department, Central Provinces. In this way the views held by practical men in England would be fully brought before everyone interested in Indian iron manufacture. Mr. Ness points out that after the failure of the blast-furnace trials, experiments made with a crudely-constructed blast-furnace gave reasonable hopes of success with a direct process. He used a blast of about ½ lb. pressure, and noted that under the greater pressure the reduction was more rapid and perfect. Mr. Ness expects that some course will soon be decided on for further trials. At present some of the Government officials take the view which was generally taken by the members of the Institute in their discussion, and advocate another trial by the blast-furnace. Others share his views, that the blast-furnace course will not answer with the Indian materials, whereas his later experiments encouraged complete experiments by one or other of the direct processes. The Indian ores being uniform he believes that if Dr. Siemens or Mr. Blair had these ores fairly tried by the methods good results may be obtained. What had to be dealt with were magnetic iron ore, and coal constituted that it must not be brought into direct contact with the ore. These were difficulties which, as he believed, had been overcome alike by Dr. Siemens and by the Blair direct system. Mr. Ness intimates that he had by the same mail forwarded to the address of the hon. secretary (Mr. John Lester) a specimen box of the iron ore and coal of the Warora district, but it had not, the hon. secretary explained, yet been delivered.

IRONMAKING BY PRIVATE ENTERPRISE IN INDIA.—Several hundred miles away from where the Indian Government desire to utilise their coal and iron ore in the Warora Valley an English company have started ironmaking, with a pair of blast-furnaces similar to those in use in South Staffordshire. The concern is known as the Bengal Iron Company, and its title indicates the place of the works. With a view to the success of their own attempts at Warora, the Government in August sent to the works of the Bengal Iron Company Mr. Walter Ness, who is making the trials in the Central Presidency. Upon that visit Mr. Ness has duly reported to the authorities for whom he acted, and in a letter just forwarded by him to the Mill and Forge Managers' Association of South Staffordshire, Mr. Ness commences that the ironstone is very abundant in the neighbourhood of the furnace, and is of such a nature and quality that it can be readily worked with the coal found in the same district. At the time of his visit only one of the furnaces had been in blast during the previous month. It had been temporarily stopped, after one 100 tons of pig iron had been run. Both furnaces were, however, Mr. Ness believes, steadily at work when he wrote, under date Dec. 22. Mr. Ness is explicit in his communication. He wishes it to be distinctly understood that he gives an opinion upon the commercial prospects of the undertaking, as he was sent out by the Government for its purposes only. He may, however, be written, safely say that with very cheap ore and fuel, that will work by a well-known process, there should not be much difficulty ultimately. He says ultimately, because to train native labour to such work was, in addition to other things, a matter of time, and no small exercise of patience and constant care, which could only be given, he thought, fitly by those who were very intimate with human nature and the details of such a work. From all he could learn when viewing this concern, and after examining the iron produced, he considered that Bessemer rails might be made from it, or that Danks or Cramp's method of puddling would have to be resorted to. Hand puddling with such weak native labour, and such a climate as that of the Central Presidency, would not be an easy matter.

In the Santiago Congress on Dec. 2 a Bill was presented, granting an exclusive privilege to Mr. William F. Houston for the construction of a railway between Santiago and the Las Condes Mines. It is to be of 2½ ft. gauge, and 55 to 60 kilometres long; the privilege to last for 25 years from the day of opening the line. Two years are allowed within which to begin to build, and two and a half more to finish it.—*Chilian Times*, Dec. 9.

METAL PRODUCTION OF THE WEST.—Nevada, the Silver State is pouring out daily \$125,000 in silver, \$75,000 in gold, \$3000 in lead, and \$2000 in other metals, making a yield of \$210,000 daily, or \$33,000,000 per annum. California is producing daily about \$10,000 in gold, \$10,000 in silver, \$3000 in quicksilver, \$5000 in lead and copper, \$7000 in coal, and \$5000 in iron, antimony, zinc, and other minerals. Its total yield is, therefore, \$73,000, corresponding to annual production from its mines of \$22,500,000. Colorado is producing \$15,000 in silver every 24 hours, \$10,000 in gold, and \$1000 in other minerals, \$25,000 daily, equal to \$7,500,000 yearly. Utah is credited with a daily output of \$12,000 in silver, \$3000 in lead, and \$8000 in other minerals—\$23,000 per day, or \$6,900,000 per annum. Idaho, Montana, Oregon, Arizona, and New Mexico together are turning out each day \$20,000 in gold, \$11,200 in silver, and \$1500 in base metal, giving a total of \$38,500 each day, or \$11,520,000 annually.—*Sutro Independent*, Jan. 6.

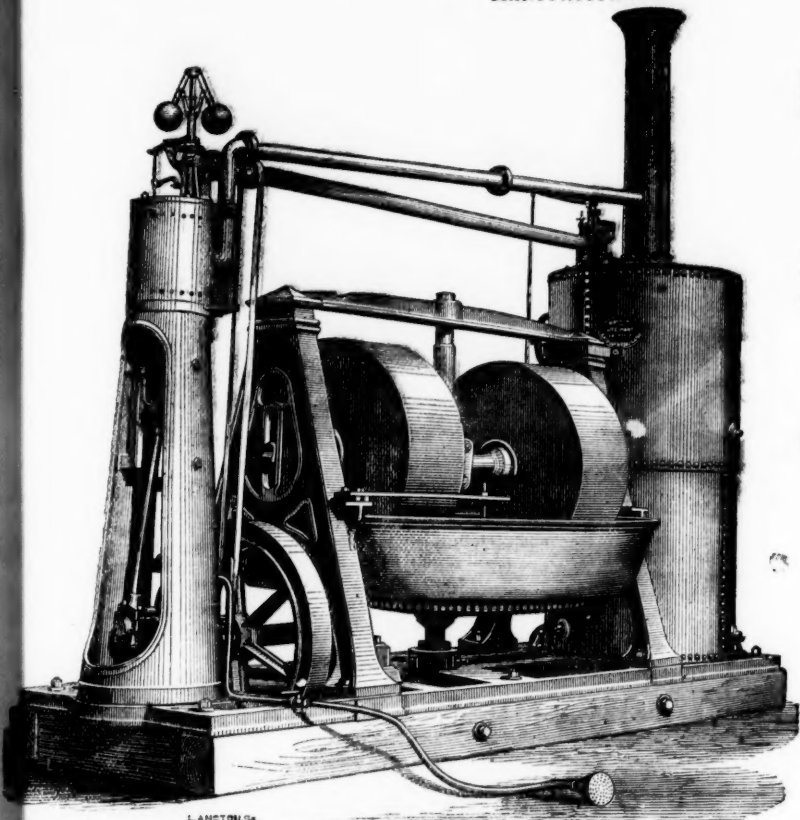
WORKING TAILINGS.—A German by the name of Ernest Koch is working the tailings left after ore has been treated by the chlorination process at the Providence Mine. He is a thoroughly scientific man, and is a graduate of several mining schools and universities in Prussia. He has contracted to work 2000 tons of the material at the Providence and 400 tons at the reduction works of Oscar Althaus. He has a process discovered by himself, and is able to extract 90 per cent. of all the metal left in the pulp. At the Providence he obtains all the way from \$3 to \$15 per ton of silver, and from \$1 to \$3 of gold, all of which was formerly thrown away. No silver is ever saved at the mine by the mill process. He uses some kind of a chemical that puts all the metal in the pulp into a solution, after which it is precipitated. We were not informed what the chemicals used consist of, or how they operate, as the inventor does not wish to give it publicity as yet. We regret Mr. Koch as one of the valuable accessions made to our mining community. He is putting into circulation gold heretofore lost entirely, which, in its present condition is of no use to anybody. Gold savers are what are needed now among miners. It is not a question of how much treasure is taken out that determines whether operators will get rich, but how much they save.—*Cora Mining News*.

TRELEIGH WOOD UNITED.—The Vice-Warden of the Stannaries will, on Feb. 15, proceed to make a call of 9d. per share on the contributors of this county, unless those interested can offer valid objections.

HOLLOWAY'S OINTMENT AND PILLS.—Few persons are so favoured by circumstances or so fortified by nature as to enable them to pass unscathed the sore trials of an inclement season. With catarrh, coughs, and influenza every day abounding, the ointment, diligently rubbed upon the chest, checks the worst results of these maladies, and securely wards off more grave and dangerous diseases of the throat and lungs. The truth of this assertion may remain unquestioned in the face of thousands of unimpeachable living attesters, who have personally derived the utmost possible benefit from this simple treatment when their present sufferings were appalling and their prospects most disheartening. Such remedies act admirably together.

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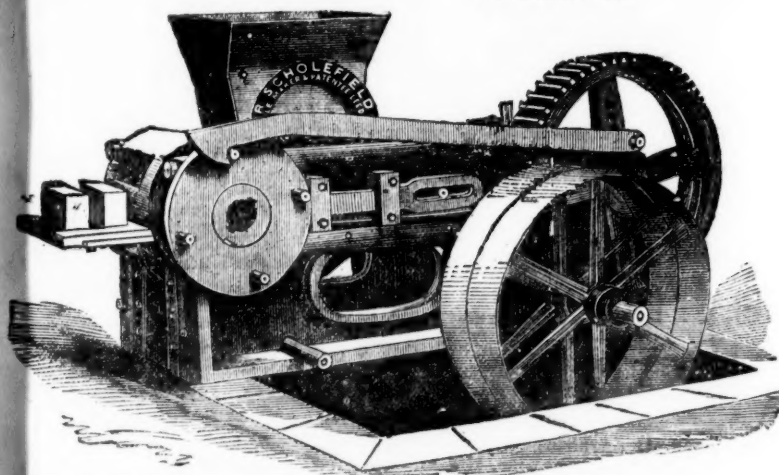


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2 men digging, each 4s. per day	£0 8 0
1 man grinding, 4s. 6d. per day	0 4 6
1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
1 boy greasing, 1s. 6d. per day	0 1 6
1 engine-man, 5s. per day	0 5 0
1 man wheeling bricks from machine to kiln, 4s. per day	0 4 0
Total cost of making 10,000 pressed bricks	£1 5 0, or 2s. 6d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

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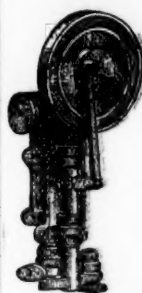
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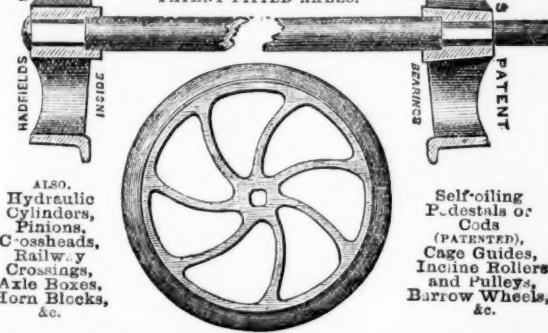


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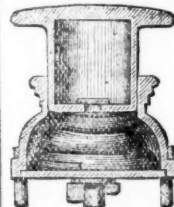
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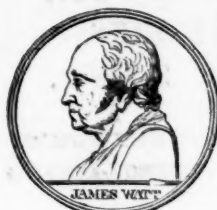
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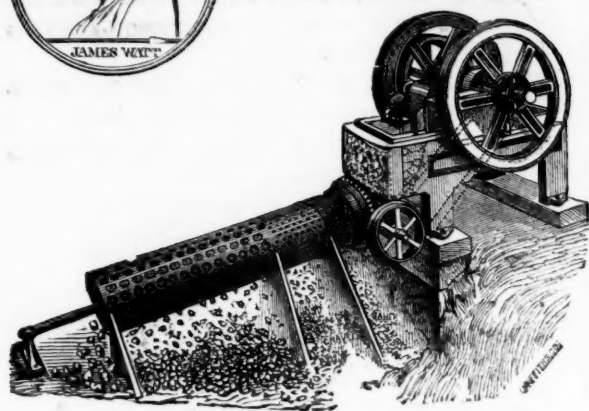


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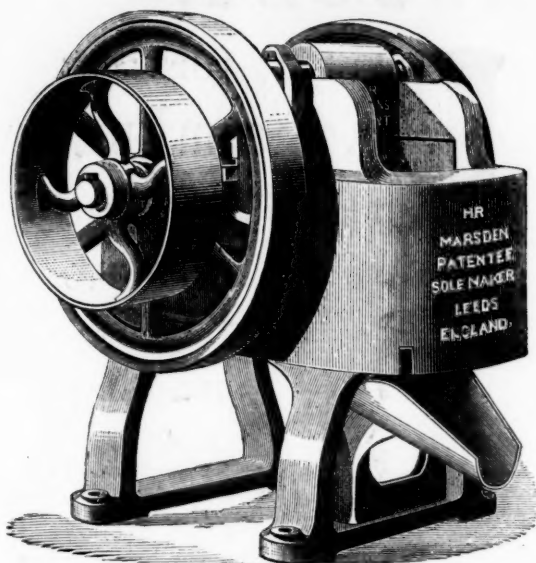
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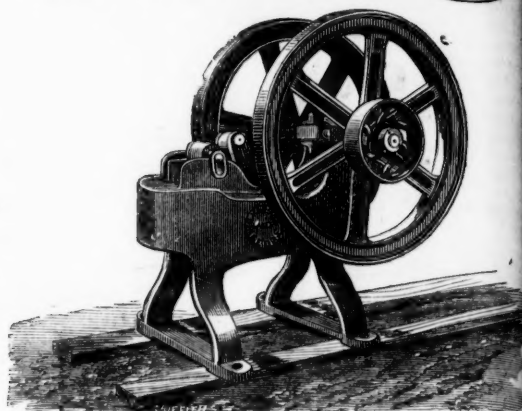
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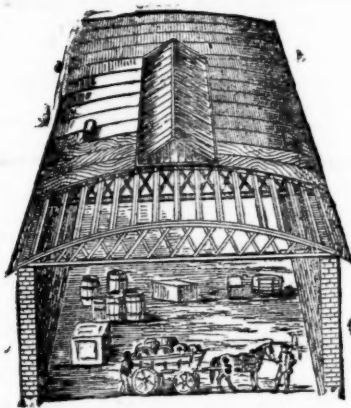


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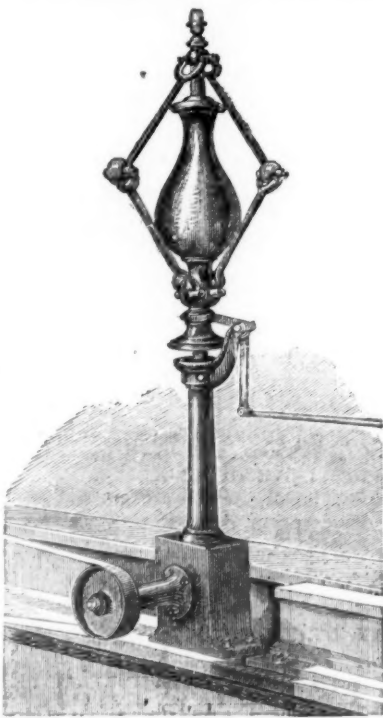
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